WEST MARKETING ISSUE
Pages 9-16

Croplife®

TOTAL CIRCULATION OVER 9,070 COPIES EACH WEEK
BPA Member, Business Publications Audit

A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL MANUFACTURER, FORMULATOR AND DEALER

Published by The Miller Publishing Co., Minneapolis, Minn.

Vol. 5 | Accepted as Controlled Circulation Publication at Minneapolis, Minn. | MARCH 10, 1958 | Subscription Rates: $5 for 1 year, $9 for 2 years | No. 10

Possibility for Additional Acres Of Cotton Seen

Pesticide and Plant Food Sales Prospects Appear to Be Improved

By JOHN CIPPERLY
Croplife Washington Correspondent

WASHINGTON—Will restrictions on the 1958 cotton crop be modified by Congress this year? There are indications here that attitudes are moving in this direction. The Senate appropriations committee agreed that when it sent the committee-approved supplemental appropriations bill to the Senate floor, that it would ask for a suspension of Senate rules and submit, as a committee amendment, a proposal to permit cotton farmers to increase acreage allotments of their 1958 crop by 30%. This proposal, offered by Sen. Allen J. Ellender (D., La.), would render such

(Continued on page 17)

1957 LEVELS RESTORED?

WASHINGTON—The Senate Agriculture Committee said on March 6 that it would report a veto-proof bill restoring price support levels for wheat and dairy products to the 1957 levels of support. Ezra Taft Benson, Secretary of Agriculture, has ordered a reduction in support levels for both of these crops.

This setback for the Benson program is seen as veto-proof in the Senate if the wheat-dairy combination holds together. For the fertilizer industry, the effect would be felt to the extent that such a support level might affect market prices.

Pennsalt Disposes Of Paulsboro, N. J. Fertilizer Plant

PHILADELPHIA—William P. Drake, president of Pennsalt Chemicals Corp., has announced that an option has been exercised by Dixon Chemical Industries, Inc., to purchase all of the assets and business of Pennsalt's I. P. Thomas Division, except a 70-acre tract at Paulsboro, N.J. where the Thomas fertilizer plant is located. That tract is being leased to Dixon with an option to buy it.

An evaluation of the company's long-range objectives, Mr. Drake stated, brought about the decision that the manufacture and sale of commercial fertilizers are not a logical field of specialization for Pennsalt. It is expected that the Thomas brand names and products will be continued by Dixon under the proposed purchase.

BENSON URGES . . .

Seek More Markets, Not Mere Storage Space for Agricultural Products

MINNEAPOLIS—Expressing his aversion to producing agricultural commodities merely for storage in government warehouses, and emphasizing the need for expanding markets to consume more of the farm output, Ezra Taft Benson, Secretary of Agriculture, explained his views in a press conference here March 3 just before making a major address before the farm forum of the Minneapolis Chamber of Commerce.

Responding to a barrage of questions put to him by newspaper reporters, magazine writers, and radio and television representatives who crowded into his hotel suite, the Secretary reiterated his conviction

(Continued on page 5)

Cotton Conference Talks Stress Fertilizers and Pesticides for Profits

EL PASO, TEXAS—A series of speakers who examined cost-cutting and quality improvement potentials in the production of cotton attracted some 500 growers, research workers, educators, agricultural chemicals representatives and others to the Western Cotton Production Conference here March 4-5.

The meeting was sponsored by the National Cotton Council and the Southwest Five-State Cotton Growers Assn. in cooperation with land-grant colleges, agricultural chemicals industry, U.S. Department of Agriculture, farm organizations and other groups. General chairman was Cecil Collerette, a Casa Grande, Ariz., cotton producer.

Giving the welcome address was Dr. Robert H. Black, dean and director of agriculture, New Mexico A&M College, State College, N.M. The program for the two-day meeting centered around an analysis of the world cotton situation, discussions of fiber quality and research reports on specific production practices in the western cotton areas.

Speaking at the Western Cotton Production Conference, Dr. J. C. Gaines of Texas A&M College said that early season control protects young fruit and allows the plant to produce a full bottom crop. A high percentage of the squares on the lower half of the plant will produce bolls if protected from insects, while a high percentage of those at the top half will shed.

Protection of squares early in the season insures early fruiting along with early maturity and better quality, Dr. Gaines said. He spoke on latest research results on non-systemic insecticides.

Dr. Gaines said the grower should consider many factors in deciding why insect control has failed. Failures often have been attributed to ineffective insecticides, poor formulations, inadequate applications and insect resistance to insecticides, Dr. Gaines said. He added that extremes in humidity, temperature, sunlight and wind have been shown to reduce the toxicity of many insecticides when applied to plants.

The cabbage looper has become progressively more injurious to irrigated cotton in certain areas, the speaker said, and appears to be resistant to all the chlorinated hydrocarbons. Small loopers can be controlled with toxaphene, toxaphene-DDT or endrin, but the larger worms are very difficult to control with any known insecticide, Dr. Gaines told the conference.

Some planters have used mixtures of phosphate and chlorinated hydrocarbon insecticides, even though research results indicate the addition of a phosphate does not increase the degree of control, according to Dr. Gaines.

"In some instances these mixtures have apparently created an environment favorable for bollworm and spider mite population increases," he said.

Mixtures of parathion or malathion in DDT and toxaphene are relied on for the control of the cotton leaf perforator, at times a serious pest in the western states. Most effective against the bollworm, a potential threat in the West, are DDT, toxaphene-DDT and endrin, Dr. Gaines said.

Several new phosphate insecticides showed considerable promise in field tests during 1957, he said. They include diazinon for mites, aphids, leafhoppers and leaf perforators; dicapthon for boll weevils and aphids;

(Continued on page 20)

California Amends Regulations Covering Use of Herbicides

SACRAMENTO—California Department of Agriculture regulations governing use of 2,4-D and other injurious herbicides have been amended to exempt from the permit requirement two newly-developed products.

One of these is a wax block impregnated with 2,4-D for control of broad leaf weeds in grass and the other is a diluted ready-to-use solution in a one quart container.

The regulations also were changed to permit application of injurious herbicides in other than the ester form closer to commercial vineyards and cotton fields in Kern, Kings, and Tulare counties than has heretofore been permitted. Two newly developed organic phosphorus insecticides, Thimet and Di-Syston, were added to the list of pesticides which may be used only under permit from a county agricultural commissioner.

Parathion-treated cord sold for control of flies was exempted from the requirement of a permit, along with certain mixtures of injurious herbicides with commercial fertilizers or agricultural minerals, or in granular form, when sold in quantities of 50 lb. or less in a 24-hour period. The previous exemption extended only to quantities of 25 lb. or less.

The amendments to the regulations were the subject of official hearings in Los Angeles and Sacramento.

Montana Fertilizer Dealers In Educational Conference To Improve Farmer Services

BOZEMAN, MONT.—Fertilizer dealers from a wide area were on hand to attend a dealers' meeting at Montana State College here Feb. 11-12. The convention, sponsored by the newly-formed Montana Plant Food Association, featured the latest information on fertilizer recommendations by a variety of experts.

Dr. A. H. Post, head of the department of agronomy and soils, discussed fertilizer potentials on forage crops in Montana. At present there are 2,410,000 acres of forage crops in the state, of which 1,073,000 acres are irrigated, he said. The irrigated hay crops include 257,000 acres of timothy and clover, 561,000 acres of alfalfa, and 250,000 acres of pasture. These crops have a minimum use potential of 100,000 tons of fertilizer.

At the present time, however, the total fertilizer tonnage in the state on all crops, is approximately 35,000 tons. Dr. Post stressed the need for quality of forage crops, as well as yield per acre. He suggested that ample quantities of phosphate should be added with nitrogen to forage crops to keep the phosphate content of the forage at optimum levels.

Harry Kittams, assistant soil scientist, discussed the alfalfa leaf analysis survey he conducted in a number of areas in Southwest Montana. His figures indicated that 28% of the fields sampled were low in

(Continued on page 21)

Inside You'll Find

Patents and Trade Marks	page 7
Better Selling	page 9
Over the Counter	page 9
What's New	page 10
Farm Service Data	page 12
Oscar and Pat	page 14
Weed of the Week	page 16
Editorials	page 22
Meeting Memos	page 23
Index of Advertisers	page 23

Capt. Floyd B. T. Myhre

WITCO APPOINTMENT — Witco Chemical Co. has announced the appointment of Capt. Floyd B. T. Myhre as assistant to the president, in charge of Witco's Washington office. Capt. Myhre will serve as Washington representative for Witco and all its divisions including the Ultra Chemical Works and Emulsol Chemical Corp. His office is located at 734 15th St., N.W., Washington 5, D.C. A retired captain, USN, since 1947, Capt. Myhre served with the National Security Industrial Assn. as Washington Navy liaison and on many of the association's advisory committees.

Researchers Map Attack On Major Cotton Pest

BERKELEY, CAL. — Spurred by their success against the spotted alfalfa aphid, University of California scientists are planning a similar campaign against the major cotton pest, the cotton leaf perforator. They'll try a many-sided attack involving selective chemicals, parasites, predators and a commercially produced disease organism.

The organism is a spore-forming bacillus which infects and kills the perforator at certain stages of its development without harming beneficial insects, according to I. M. Hall, assistant insect pathologist on the Riverside campus. It also is deadly to cotton pests such as the salt marsh caterpillar and the cabbage looper. It has no effect on warm-blooded animals.

Mr. Hall, with H. T. Reynolds and Robert van den Bosch, will use the bacillus as a microbial insecticide, bolstering its attack with selective chemicals and natural enemies already present in cotton fields. The cotton leaf perforator is one of the most serious pests of cotton in southwestern desert areas.

American Potash Sales Set Record

LOS ANGELES—Sales of American Potash & Chemical Corp. reached a new high level in the year ended Dec. 31, 1957, Peter Colefax, president, has announced. Net sales of the company during 1957 were $42,837,213 as compared with $41,750,628 for the preceding year.

The 2.6% increase in sales reflected the continued market growth of the company's newer products, Mr. Colefax said. However, slackening demand for several of the company's principal products resulted in a decrease of earnings of 7.8%.

Net income for the year 1957 was $4,706,235 equal after preferred dividends to $2.35 a share on the 1,908,444 shares of class A and common stocks outstanding at the end of the year. In 1956, earnings amounted to $5,103,091 equal after preferred dividends to $2.64 a share on the 1,847,554 shares then outstanding.

Frank J. Randall Elected Head of Colorado Association

DENVER—Frank J. Randall, the C. D. Smith Co., Grand Junction, Colo., was elected president of the Colorado Agricultural Chemicals Assn. at the annual meeting of the group held here recently. Mr. Randall succeeds Irwin C. Elliott, Chemagro Corp., Littleton, Colo.

Other new officers are Leonard Everett, Woodbury Chemical Co., Denver, vice president; D. E. Garrison, Balcomb Industries, Greeley, Colo., secretary-treasurer; and Harold Mankoff, Mannco Chemical Co., Denver, and E. H. Macomber, American Cyanamid Co., Boulder, Colo., both directors.

Speakers at the meeting included Jack Dreessen, National Agricultural Chemicals Assn., herbicide specialist; James Patton, president of the National Farmers Union, Denver, and Paul Swisher, Colorado commissioner of agriculture.

Special recognition was given during the meeting to the charter members who helped organize the association eight years ago. They included Tom Snipes, Chemagro Corp., New York; W. D. Smith, Braun-Knecht-Heimann Co., Denver; Frank Jasper, Colorado Fuel & Iron, Denver; Carl Dewey, the C. D. Smith Co., Grand Junction, Colo.; Sam McCampbell, Selco Supply Co., Eaton, Colo.; W. E. McCaully, Shell Chemical Corp., New York; Fred Cherry, Rohm & Haas Co., Sacramento, and Dr. Leslie B. Daniels, Colorado State University, Ft. Collins, Colo.

USDA Grants Acceptance To Experimental Label for Sevin Insecticide

NEW YORK — Acceptance of a Crag Sevin experimental label for control of apple insects has been granted by the U.S. Department of Agriculture, it was announced recently by Dr. R. H. Wellman, manager, Crag agricultural chemicals department, Union Carbide Chemicals Co., Division of Union Carbide Corp.

Dr. Wellman said the new insecticide can be used on apples grown for sale because a temporary tolerance for Sevin 50% wettable powder has been granted under provisions of Public Law 318 (Miller amendment).

"However, Sevin will be commercially available only in limited quantities during 1958 to experienced apple growers for experimental use," he explained.

"When governmental pesticide regulations are fully complied with, it is expected that Sevin will be available for widespread commercial sales," he added.

"Sevin shows outstanding control of a wide range of apple pests," he continued. "Extensive tests in major apple-growing areas indicate the material promises simultaneous control of codling moth, red-banded leaf roller, plum curculio, aphids, apple maggot, and other important insects."

Sevin is 1-naphthyl N-methylcarbamate, a novel chemical in the insecticide field. According to Union Carbide, the new compound will be relatively safe to handle, and will also be of special interest to growers in areas where insect resistance to present insecticides is developing.

Numerous federal and state agricultural experiment station scientists have cooperated in obtaining insect control and residue data on apples, Dr. Wellman said.

New Mineral Laboratory For IMC in Florida

BARTOW, FLA.—A new mineralogical laboratory has been put into operation by International Minerals & Chemical Corp. at its experimental research station in Mulberry, Fla. The new facility will allow full-range mineralogical investigations, according to Dr. I. M. LeBaron, IMC research vice president.

Besides phosphate and potash for the agricultural chemical trade, IMC supplies a dozen additional commodities in the field of industrial minerals and chemicals.

The new laboratory group at Mulberry brings to 74 the number of scientists and technicians on the IMC research staff there. Elliott Northcott, manager of the station, now the largest industrial research unit in the state, says the complete staff skills include mineralogy, metallurgy, mineral processing, inorganic chemistry and chemical engineering.

The Florida station handles about 50% of the company's total research program, some of which was shifted from the main research laboratory at Skokie, near Chicago. The Florida station handles inorganic chemistry, chemical processing and engineering, minerals beneficiation, and mineralogy; Skokie handles organic, biological, agronomy and food products research.

NEW MEXICO APPOINTMENT

STATE COLLEGE, N.M.—Billy A. Melton has been appointed assistant agronomist with the agricultural experiment station and assistant professor in the agronomy department of New Mexico A&M College. He will teach part time and assist with the alfalfa breeding and pasture production work.

NIAGARA REPRESENTATIVES—Shown above are Midwest sales representatives of the newly formed retail department of Niagara Chemical Division of Food Machinery & Chemical Corp. From left to right are, standing: Carroll L. Edwards, Lawrence G. Mayne, manager of the retail department, Frank J. Winstel, midwestern sales supervisor; seated, Gilman H. Stordock, Jr., Daniel A. Sjoquist, J. Duncan Lewis and W. J. Beaumont. Niagara, which recently announced formation of the new retail department, said that it would assume the sales of the firm's home garden pesticide line. Also among products to be marketed by the department is Diphacin, a rat and mouse bait.

Jerry B. Davis

New Editorial Assistant Named by NPFI

WASHINGTON — Jerry B. Davis has been appointed to the staff of the National Plant Food Institute as editorial assistant, Dr. Russell Coleman, executive vice president, has announced.

Mr. Davis' appointment is intended primarily to strengthen the work of the Institute in the field of visual aids. He fills a position on the Institute staff which has been vacant for several months.

Mr. Davis comes to the Institute from the agricultural research service, U.S. Department of Agriculture, where he was an information specialist. He was graduated in 1954 from Iowa State College where he majored in agricultural journalism. He is a native of Iowa.

Mr. Davis will be responsible for the production and distribution of Institute motion pictures and, in addition, will assist in editing the "Plant Food Review," the Institute's quarterly magazine, as well as other Institute publications.

In addition to two years of active duty with the army, where he was connected with troop information and education, Mr. Davis has had experience with several newspapers during his college training and since graduation. These include the Iowa Falls Citizen, Eagle Grove (Iowa) Eagle, Cedar Rapids (Iowa) Gazette, Monticello (Iowa) Express, Monmouth (New Jersey) Message and the Asbury Park (New Jersey) Evening Press. He was a trainee with the USDA office of information in 1954 and was with the information service of Iowa State College during late 1954 and early 1955.

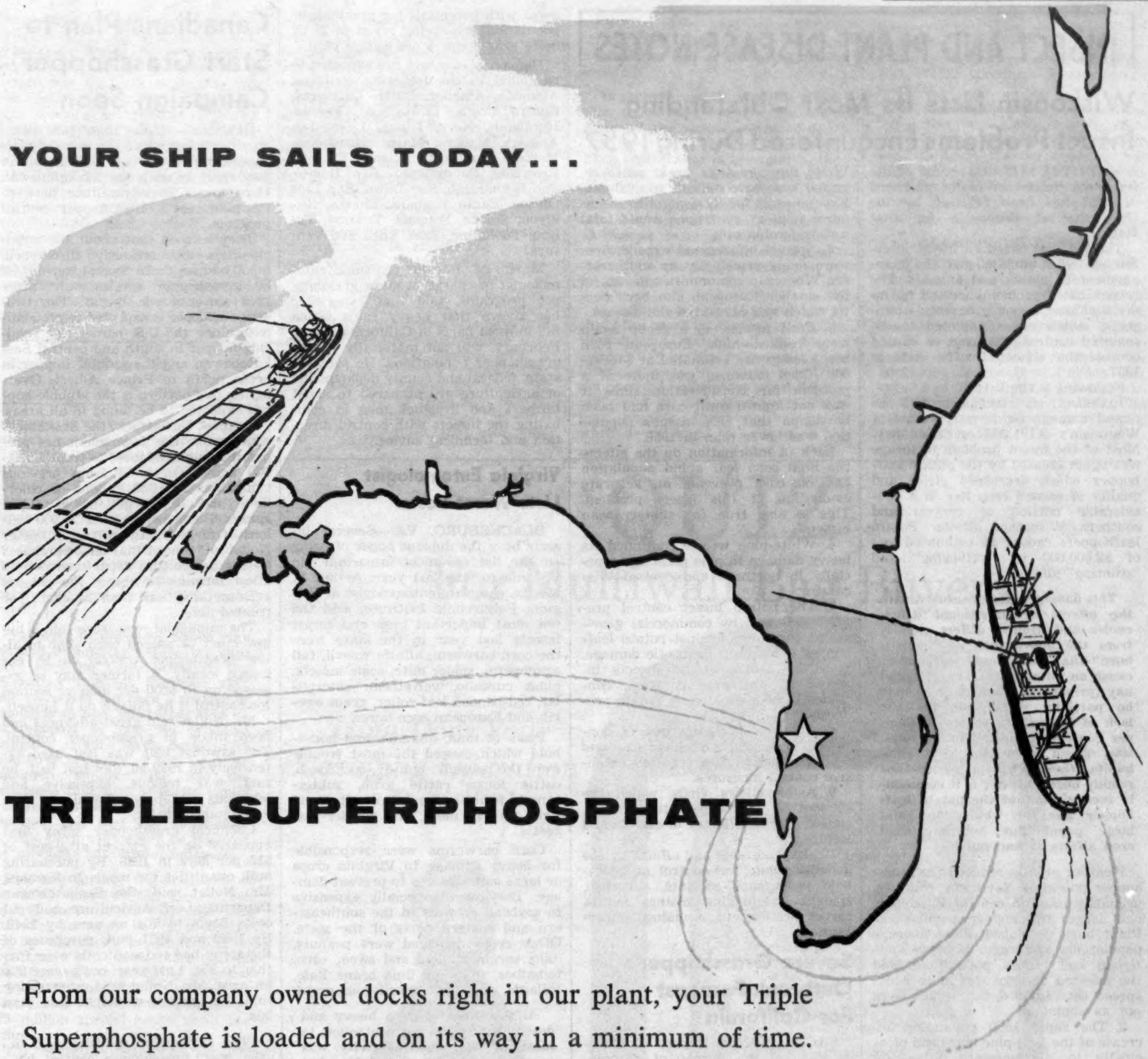
Fertilizer Safety Section To Meet October 20-21

CHICAGO — The fertilizer section of the National Safety Council will hold its annual fall meeting at the LaSalle Hotel, Chicago, Oct. 20-21, according to an announcement by the executive committee of the section which met recently in Nashville.

The executive committee will meet again at the Roanoke Hotel, Roanoke, Va., on Thursday, June 12, at which time final plans for the annual meeting will be completed.

IDAHO WEED MEETING

MOSCOW, IDAHO — The fourth biennial weed control short course will be held on the campus of the University of Idaho, March 13-15, Lambert Erickson and Robert Higgins, members of the University of Idaho agronomy staff, have announced. County weed workers, representatives of chemical firms, county agricultural agents and county commissioners will attend the school sponsored by the Idaho Noxious Weed Control Assn. Ralph Welch, Emmett, is president.



From our company owned docks right in our plant, your Triple Superphosphate is loaded and on its way in a minimum of time.
If you can be served by water — we can serve you best —

ONE SOURCE FOR ALL THREE

RUN-OF-PILE
GRANULAR
COARSE

U. S. PHOSPHORIC PRODUCTS
INDIANAPOLIS OFFICE
P. O. Box 55251 • Uptown Station
INDIANAPOLIS 5, INDIANA
Phone: Walnut 3-5477

There's a **BRADLEY & BAKER OFFICE** near you. Their representative would be pleased to consult with you on your requirements and to advise you on your most convenient delivery routings.

Area Offices:

Atlanta, Georgia — **Phone: Trinity 6-4393**
St. Louis, Missouri — **Phone: Parkview 7-8166**
Norfolk, Virginia — **Phone: Madison 2-2708**

U.S. PHOSPHORIC PRODUCTS
TAMPA FLORIDA
Division
TENNESSEE CORPORATION

BRADLEY & BAKER
Sales Agents
155 East 44th Street — New York 17, N. Y.
Phone: Murray Hill 2-5325

INSECT AND PLANT DISEASE NOTES

Wisconsin Lists Its Most Outstanding Insect Problems Encountered During 1957

MADISON, WIS.—A review of the ten most important insect problems of 1957 has been released by the University of Wisconsin for that state.

The list was based on insect interference with humans and the management of plants and animals. The review listed problems caused by individual insects, or groupings of insects, which either inflicted losses, required control measures, or caused considerable concern to the state in 1957.

Following is the list:

1. Collectively, forage insects inflicted damage on large portions of Wisconsin's 3,191,000 acres of hay. Most of the insect problem in forage was again created by the potato leafhopper which decreased yields and quality of second crop hay in a considerable portion of central and southern Wisconsin alfalfa. Potato leafhoppers caused an estimated loss of $2,600,000 by "yellowing" and "stunting" alfalfa.

This damage, often confused with the effects of nutritional deficiencies and drouth, differs greatly from the appearance of "hopperburn" that these same leafhoppers cause on potatoes. Heavy yields of hay (principally the first crop) may be partially responsible for the lack of interest in potato leafhopper control. Also, due to its small size, green color and concealing habits, these leafhoppers are not readily observed; nor is it commonly recognized that the potato leafhopper has the ability to build large populations before second crop alfalfa is harvested.

Weather greatly reduced the grasshopper potential. Yet many counties, primarily those in central Wisconsin, had large grasshopper populations. Plant bugs developed about average populations in forage. Meadow spittlebug had higher populations and the infested acreage was more widespread than in 1956, but aphids were not as abundant.

2. The rapid 1956 population increase of the jack-pine budworm principally in northwestern Wisconsin prompted preparation for treating up to 200,000 acres in 1957. When it was found that natural factors were causing the outbreak to collapse, treatment was limited to 26,135 acres.

3. Numbers of individuals concerned with and directing efforts towards fly control in homes, restaurants, barns, in other buildings and on animals were great enough to place flies (house, stable, heel, horn, cluster, deer and horse flies) high on the list. While flies create a great nuisance, actual losses are difficult to evaluate. Expenditures for fly control to insure more sanitary conditions would total a considerable sum.

4. Special efforts and expenditures were made principally by southeastern Wisconsin communities to control the smaller European elm bark beetle which spreads Dutch elm disease.

5. Corn insects as a group again were ranked high. European corn borer losses are estimated at $1,950,000. Corn earworm was more of a problem for consideration since it was not known until corn had been harvested that this insect's population was lower than in 1956.

Lack of information on the effects the high corn leaf aphid population had on corn prevents an accurate evaluation of this insect problem. This is also true for subterranean insects.

6. White-pine weevil continued its heavy damage to pine plantings especially in northern and central Wisconsin.

7. The potato insect control program followed by commercial growers as insurance against potato leafhopper and potato fleabeetle damage, plus the damage these insects inflicted on untreated potatoes, continued to be a problem in potato production.

8. Apple and cherry insects continued to present a problem in sound fruit production and required extensive control measures.

9. Aster-yellows virus, which the six-spotted leafhopper transmitted, caused extensive losses to carrots and lettuce.

10. Expenditures and efforts by the general public for control of household pests such as ants, silverfish, spiders, casemaking clothes moths, carpet beetles, etc., remained important.

Severe Grasshopper Outbreak Forecast For California

SACRAMENTO—Robert W. Harper, chief of the Bureau of Entomology, California Department of Agriculture, says that all signs point to one of the worst grasshopper outbreaks in recent years.

He predicts that rangeland areas in at least 36 counties will support grasshopper populations threatening to crops, pastures and range.

Adult grasshopper surveys made by county, state and federal departments of agriculture in the fall of 1957 revealed approximately 3,000,000 acres with potentials for grasshopper populations averaging seven to 28 or more grasshoppers per square yard.

Damaging numbers are expected to be found in the following counties: Alameda, Amador, Butte, Calaveras, Contra Costa, El Dorado, Fresno, Humboldt, Kern, Kings, Lake, Los Angeles, Madera, Marin, Mendocino, Merced, Monterey, Nevada, Orange, Riverside, Sacramento, San Benito, San Bernardino, San Diego, San Luis Obispo, Santa Barbara, Shasta, Siskiyou, Solano, Sonoma, Tehama, Tulare, Tuolumne, Yolo, Yuba and Ventura.

Martin M. Poyner, economic entomologist in charge of state grasshopper programs, said that experience has shown that heavy rains which fell in most parts of California in late February, will not materially reduce grasshopper populations. He said the state, federal and county departments of agriculture are prepared to assist farmers and livestock men in combating the insects with control direction and technical advice.

Virginia Entomologist Lists Worst Pests

BLACKSBURG, VA.—Several insects have the dubious honor of being on the list of "most important" in Virginia for the last year. Arthur P. Morris, associate entomologist at Virginia Polytechnic Institute, said the ten most important crop and forest insects last year in the state were the corn earworm, alfalfa weevil, fall armyworm, spider mite, scale insects, plum curculio, velvetbean caterpillar, red-banded leaf roller, grain weevil, and European corn borer.

Pests of man, animals, and household which caused the most trouble were the housefly, hornfly, cockroach, cattle louse, cattle grub, subterranean termite, mosquito, mites and ticks, clothes moth, and powder-post beetle.

Corn earworms were responsible for heavy damage to Virginia crops or large expenditures to prevent damage. They were especially expensive to soybean growers in the southeastern and eastern parts of the state. Other crops damaged were peanuts, milo, sorghum, field and sweet corn, tomatoes, snap and lima beans, kale, collards, and other cruciferous crops.

Alfalfa weevils were heavy and destructive, when not controlled, in most of the state. Activity was greatest during April and May but began as early as the first of March and continued through June.

Fall armyworms damaged pastures, peanuts, small grains for cover crops, and other crops in scattered localities from early August until early November.

Velvetbean caterpillars were serious on soybeans in southeastern and eastern Virginia for the first time and insecticidal applications were widely used. The caterpillars caused some damage to peanuts and snap beans.

Only a few widely scattered fields of alfalfa had heavy populations of pea aphids or spotted alfalfa aphids.

Ips beetles, southern pine beetles, and black turpentine beetles, killed many pine trees last season.

Nantucket pine-tip moth larvae did considerable damage to loblolly and Virginia pines in parts of the state where these species are prevalent.

White pine weevils damaged the terminals of pine seedlings, young pines, and plantations in scattered areas.

Pine sawfly larvae defoliated pine trees from April through October. Damage was heaviest in central, eastern, southeastern, and south-central areas.

Several species of scale insects were important, usually on individual or small groups of ornamental plants scattered throughout the state.

Canadians Plan to Start Grasshopper Campaign Soon

REGINA—More than 145 municipal officials from grasshopper-threatened areas of Saskatchewan met recently with the Saskatchewan Department of Agriculture here to lay plans for a 1958 hopper control program.

They learned that about 100 municipalities are seriously threatened, mostly in southern Saskatchewan. Of 80 grasshopper species only three pose an economic threat. The two-striped hopper is expected to predominate along the U.S. border, the roadside hopper in south and central Saskatchewan and the stubble hopper in areas north to Prince Albert. Overlaying this pattern is the stubble hopper expected to be found in all areas.

To meet this attack, the Saskatchewan agriculture department has prepared enough chemical to treat 1,000,000 acres. On hand from previous campaigns is 9,000 gallons of chlordane and 10,000 gallons of aldrin sprays. Being prepared is 25,000 gallons of dieldrin. Agriculture Minister Nollet announced that bulk purchases by the agriculture department would allow farmers to obtain the poisons at something less than 20 cents per treated acre.

The municipal men were told a by-law must be passed each year to allow grasshopper control to be enforced locally. A farmer may be assessed up to $200 per quarter section for control if he fails to do it himself.

Mr. Nollet said great advances had been made in grasshopper control. The sawdust bait was last used extensively in 1949-50. Sawdust bait, he said, was tedious, expensive and laborious to apply. Chemicals have now replaced baits.

Chemical grasshopper spray first appeared on the market at a cost of $13 per acre in 1948. By purchasing bulk quantities for resale to farmers, Mr. Nollet said, the Saskatchewan Department of Agriculture had cut costs down to 70¢ an acre by 1949. By 1950 and 1951 bulk purchases of the spray had reduced costs even further to 35¢. Last year, costs were 22¢ an acre, Mr. Nollet said, announcing that this year it would be less than 20¢.

The agriculture minister said in the past, grasshopper control has been a losing battle. "Now, however, we have an excellent opportunity to stop the grasshopper build up. It depends on how well organized we are. We have a good supply of chemicals on hand at reasonable costs."

Mr. Nollet said cultural practices were still needed to control grasshoppers. Cultural methods will concentrate the insects on a small acreage where they can be killed with poison spray, Mr. Nollet said.

Saskatchewan has been plagued by the insects 24 out of the last 40 years, V. B. Holmes, assistant director of the provincial Plant Industry Branch, said The first organized grasshopper campaigns, he said, were operated between 1918-23. From 1931-41, grasshoppers were a constant problem. They struck again in 1947-51. The present hordes have been building up since 1956.

Mr. Holmes compared poison bait mixes used in the past for grasshopper control with the type of recipe you might find in a cook book. In 1920, the bait was bran, paris green, molasses, arsenic, oranges, lemons and water. Another recipe was horse droppings and paris green. The 1920 campaign cost $360,000; $1,000,000 each in 1949 and 1950. The $1,000,000 expenditure may seem high, he said, but it saved $50,000,000 in crop.

In 1934, Mr. Holmes said, the grasshopper infestation was so bad the forecast map "was just a red blot from Lloydminster to Estevan." That

CHOOSE YOUR AGRICULTURAL CHEMICAL APPLICATION EQUIPMENT FROM THE . . .

Complete Broyhill ® LINE

the name that means CUSTOM QUALITY

TRAILER, TRUCK or TRACTOR MOUNTED for

- Aqua Ammonia
- Nitrogen Solutions
- Insecticides
- Weedicides

Write today for a complete catalog to

THE BROYHILL COMPANY DAKOTA CITY, NEBRASKA

year the department made poison bait materials available free to farmers. It has been found from experience that less poison was wasted when a charge was made. The department paid half the $3 per acre costs for spray chemical in 1948 and its policy of bulk purchases and resale at cost has cut costs of grasshopper control for farmers to less than 20¢ per acre.

Dr. Lloyd Putman, of the federal entomology lab in Saskatoon, along with his colleagues, Paul Riegert and Roy Pickford, gave details of the grasshopper forecast and control methods. Their prediction was summed up on a map where extent of the infestation was shown for each municipality, along with the grasshopper species that would predominate.

BENSON

(Continued from page 1)

that greater consumption of all farm products would go a long way toward solving the current problems of surplus and sagging markets.

He termed as "crazy," the idea of placing so much emphasis on the government's pegging farm prices at the expense of overlooking the developing of markets. Improved efficiency, particularly in marketing and distribution, was cited as being a most important weapon for fighting rising costs.

In reply to questions about why he had decided to reduce the support level for dairy products, the Secretary told his inquirers that the move had not been a matter of choice with him, but rather that he is required by law "to establish supports at such levels between 75 and 90% of parity as will asure an adequate supply." He told the newsmen that 75% of parity would result in more than adequate production, and that the Commodity Credit Corp. still would be required to purchase substantial amounts.

Pursuing further the discussion on the dairy question, Mr. Benson said he will continue to cooperate fully with the industry in its promotion and merchandising programs and the department will furthermore push its education efforts aimed at increased dairy farm efficiency. He said he has also recommended continuation of the $75 million special school milk program.

The Secretary reminded the conference that the acreage reserve program, which he has never looked upon with much enthusiasm, should be terminated by the end of 1958. He said that this program was not at all successful in reducing the surplus in 1956, but helped some in 1957 and may be effective to some extent in 1958. The conservation reserve concept of the program, he said, is much better since it does not allow the best land to stand idle. Marginal land, that should have been out of production in the first place, will not be in the production picture under the conservation program, he said.

Asked why he continued on the job in the face of such monumental political opposition, Mr. Benson smiled and said he has a job to do and so long as he feels he can serve his country, he intends to remain. The farm program, he said, is gaining ground and there is much evidence that farmers do not want to place all their dependence on government price props; that they would much rather see markets developed where goods may be distributed through normal channels.

If this is true, the Secretary was asked, why do the politicians give out so much personal abuse? Mr. Benson explained that the present farm trend is moving away from rigid supports, and because of this, politicians who have pledged their constituents continued price pegging by the government hope to put a halt to this trend and save themselves from getting out on a limb. The farm program is playing a major part in national affairs, and "I am more convinced than ever before that the present program is right . . . and more and more farmers are agreeing that the government should get out of agriculture," he said. "Agriculture is undergoing a technical revolution. It is a dynamic industry, watching new developments all the time, and it is impossible to freeze the progress being made in the direction of greater freedom on the farm, and greater efficiency."

The Secretary told his note-taking audience that he should not be pictured as being "against" all supports. "I don't say they have no place," he told the reporters. "On the contrary, they are effective when used properly." Referring to critics who have said that Mr. Benson would reduce supports to the lowest possible point if he could, the Secretary reminded that under the law, he has the authority to set the rate at from zero to 90% of parity at his descretion on some crops. He reminded that crop supports have never been under 65% of parity. "My desire is to keep farm commodities out of warehouses," he declared.

Is there a possibility of going further in the export program to move some of the surplus commodities? The Secretary thought a moment, then replied that in his opinion, the U.S. has gone about as far as it can in this direction without risking disruption of world markets. So far, it was pointed out, the flow of American farm products has not caused consternation in world markets, with the possible exception of in Canada.

Describing his recent world trip to study the broad market situation, Mr. Benson said that in all his travels and in all of his discussions with marketing experts in various countries, not once did he hear the word "dumping" used in connection with America's exports. However, he added, when he returned to London on the homeward trip, some alarm was noted in Parliament on the part of Canadian representatives about the presence of U.S. products on the export market.

Mr. Benson, however, had nothing but praise for the 480 program, stating that it has been operated in a fair and equitable manner, but by the same token, should be handled in accordance with the world market situation.

AGRONOMIST RETIRES

STATE COLLEGE, N.M.—John C. Overpeck, agronomist at New Mexico A&M College, has retired after 35 years' service. A native of Indiana, Mr. Overpeck came to New Mexico A&M as head of the agronomy department in 1923. He received his bachelor's degree from Purdue University in 1917 and his master's degree from Ohio State in 1920. He taught at the University of Wyoming from 1920 to 1923.

QUIZ

For Multiwall Bag Buyers

"How Does Your Packaging Operation Rate?"

1 Is your bag correctly sized for your product?
2 Is your bag properly constructed for your product?
3 If loss of product is caused by deterioration, would special protective sheets help to reduce such loss?
4 Is the total cost of your bag out of proportion to the selling price of your product?
5 Does your product cost warrant redesigning your bag to merchandise your product more effectively?
6 Are you using the most economical filling machine available for packaging?
7 Are your current suppliers giving you the service you desire?
8 Are your suppliers integrated and capable of maintaining dependable service at all times, under all conditions?
9 Are your suppliers' representatives qualified to help you with your packaging, sales promotion and marketing?

Perhaps we may be able to help you to arrive at the right answers in order to achieve higher production at lower costs.

KRAFT BAG CORPORATION

Gilman Paper Company Subsidiary

630 Fifth Avenue, New York 20, N. Y.
Daily News Bldg., Chicago 6, Ill.

Plants at St. Marys, Ga. and Gilman, Vt.

Sales Agents for The Kraftpacker Open Mouth Bag Filling Machine

Gilman PAPER CO.
*St. Marys Kraft Corp.
*Command Tape Div.
*The Coltwood Corp.
*Kraft Bag Corp.

☐ O.K. Kraft... Help me to answer your Quiz. Please have representative call. C

COMPANY

ADDRESS

CITY ZONE STATE

PRODUCT MFD

NAME

IN FINAL ANALYSIS . . .

Management Carries Chief Responsibility for Setting Favorable Safety Climate

By Paul T. Truitt*
Executive Vice President
National Plant Food Institute
Washington, D. C.

A subject of great opportunity and, too often, of litle action, is safety. More accurately, the subject is "Management's Responsibility to Safety."

Let us begin by admitting first that, safety pays! In all humane values—in dollars and cents. Employees everywhere, even in the fertilizer industry, want to work under good conditions in safe mines and plants.

Admitting these points, we may ask ourselves why the achievement of a full safety program for fertilizers is moved forward quite slowly and then only with effort. Technological progress goes forward with speed and in great strides. New processes, new machinery, new products come forth rapidly. Progress is forced by the economic pressure for more efficiency in putting more plant food under the crops—and this at a profit for the manufacturer and the farmer alike.

For the same reason, safety should keep pace with advances in technology and in product. Surely, a one-hundred-per-cent effective safety program is a required part of the dynamic economy which carries us along today.

What is the real nature of safety? Of course, safety is fact—not theory—yet it is a relative term. To achieve safety, one must control the environmental elements which make up our daily habitat—the most important element being the human mind.

Therefore, I am sure the very first step in building a better safety program is for fertilizer management to first win the mind of each employee from the lowest worker to the highest executive; and, next, to make each mind conscious of how to work safely. This undertaking is directly analogous to the global struggle now going on between the free world and the iron curtain countries. Each side is seeking to win a cold war by winning the minds of its peoples—a truly fantastic spectacle, yet a thoroughly practicable approach.

I think we may say with assurance that the turning point from no safety program or a mediocre safety program to a star performance begins in the worker's mind, with what we may call "attitude." Attitude is a preconceived point of view. Attitude is shaped by many forces. It cannot be simply taught like the multiplication table. It is acquired from education, experience and observation.

Attitudes can spring from "first experiences" or they can be adopted or taken over from others who exert strong influences on their co-workers. We see this almost daily among our friends and associates. Knowledge of how to work safely on the job can be taught or it can be put before the employee, but the lesson will not be learned and become a part of the employee's mind and daily thinking unless he first has developed the right attitude towards safety. Someone has aptly said: "Safe habits and attitudes are more often caught than taught."

Management must decide in the beginning that it is going all out for safety. In this industry, there is unfortunately abundant need and opportunity for improvement. We have just been talking about attitude and I refer to it again because I want to make clear the attitude of the National Plant Food Institute towards safety. We are for it! We are convinced it is best accomplished through our own fertilizer section in the National Safety Council and through our own executive committee of 36, each of whom serves a 3-year term.

Now, many industries do carry on safety programs through their own trade association offices and, in instances, this method is very successful. In my view, it is more expensive and less direct than the method we use. Recently, the National Safety Council queried trade association executives about safety programs. The responses illustrate beyond any doubt that ignorance and wrong attitudes are widespread. Typical reactions were:

"Our group has no accident problem."
"Suppose the program fails."
"We don't have enough staff or time."
"My budget is too tight now."

These are all excuses for not performing or supporting, as does the National Plant Food Institute, an essential and useful service to members. The recommendation I would make today to each fertilizer manufacturer who is not already a member, is to join the National Safety Council and cooperate in the work of its fertilizer section, and to do it now.

In looking at management's role in safety, all agree that the first responsibility for an effective safety program rests squarely upon the top executive or governing group in any organization. Certainly, it cannot be placed elsewhere. The selling and the support for the program must come from the top. The management team must be inclusive from top to bottom: owners, managers, and employees alike. Surely not even one person can say: "Safety is not my responsibility."

Passive interest only will not produce results. Active interest is essential—the kind that gets things done is what counts. Top management men necessarily must pass responsibility on to subordinates who, in turn, with their subordinates, run the daily affairs of the business. Thus, the essentiality of establishing, from the top down, the right attitude towards safety, the right plan of action, and adequate machinery to carry out the plan, is apparent.

And, management should take a firm hold on its own courage, because selling safety is not always easy. However, management may rest secure in the knowledge that a safety program, soundly planned and administered, will stand up on its own merits.

After management has made the decision to do something positive, several steps must be taken. The problem in each individual company must be analyzed. A workable operating policy and program which fit local needs must be developed. Responsibility must be assigned; and money and time—the two major working tools—must be made available. Other tools, publications, posters, films, etc., are readily available from the vast resources of the National Safety Council and other organizations which have long carried on successful safety programs.

Management usually knows the reasons why certain foremen and workers are unsatisfactory. These individuals have bad records of one kind or another. Management must be equally alert to put the promotion and administration of its safety program in the hands of those who have demonstrated skill in human relations and in getting the most in cooperation from their fellow workers.

Let us turn now to some comments on the need and opportunity for improvement in safety in this industry. It has been suggested that some believe this industry will always show a relatively high accident frequency when compared with other industries, because of hazards "inherent" in this business. The experience of the Fertilizer Section in the National Safety Council has shown that this view is not true. Progress has been made. Yet, I assure you, perfection has not been reached. Those hazards "inherent in the business," if allowed to go uncontrolled, will prove far more costly than if they are met head on by managements which insist on safety. The doctrine of "laissez faire" as applied to safety will not pay dividends.

The record since 1950 with only a fairly small proportion of all fertilizer companies cooperating is encouraging, even impressive. A great weakness lies in the fact that at least three-fourths of the companies in this business do not participate. By and large, these are smaller companies in which the frequency and severity rates are higher than for the larger operators. It is an important fact that, although the larger companies which participate in a safety program do enjoy better employee relations and do get premium refunds based on experience from the insurers, the rates for all companies remain higher than they would be if all were to join successfully to reduce accidents. Results achieved by all companies would then lower the rates. Companies participating in the National Safety Council program reduced frequency from 15.0 in 1950 to 10.8 in 1956, or 30%.

In 1957, some 175 plants entered the National Safety Council fertilizer section safety contest. Result: A drop of 43% in accident frequency. This is clear proof that participation pays. Those 175 companies wrote a much better performance record than the over 600 companies which stayed out. The accident frequency rate is higher among the "stay outs": consequently, the higher premiums and the accident-prone reputation which some attribute to our industry.

As a matter of fact, the 1956 frequency rate for disabling injuries per one million manhours for all industries reporting to the National Safety Council was 6.38. For the fertilizer industry, it was 10.82, exceeded only by, and in order of magnitude, marine transportation, coal mining, lumber, mining other than coal, construction, air transport, transit, and food. In the case of severity rates, in 1956 time charges in terms of days per one million manhours stand at 733 days for all industries; 1,953 days for the fertilizer industry, exceeded only, and in the order of magnitude, by coal mining, quarrying, lumber, construction, mining other than coal, and marine transportation.

A look at the figures for all fertilizer companies reporting to the National Safety Council, for the years 1954, 1955 and 1956, as distinguished from those in the 1957 contest is revealing:

	1954	1955	1956
Average Frequency Rates	11.70	11.80	10.82
Average Severity Rates	1,954	3,447	1,953

Here we see no improvement in frequency rate as compared to a 43% drop among the companies in the contest, Here, also, we see a perfect illustration of what really bad accidents do to the severity rate.

The big increase in 1955 over 1954 and 1956 was caused by 10 fatalities in 1955. There were 5 each

Paul T. Truitt

in 1954 and 1956. In preparing these remarks, I studied the records of a group of 38 dry mixing plants, 27 wet mixing plants and 9 general plants which participated in the National Safety Council program for 1955, 1956, and 1957.

Only 4 out of 38 dry mixing plants had a higher frequency in 1957 than they had in 1955. Fifteen out of 38 reduced their frequency from figures as high as 90.47 to 0 in 1957. Others made impressive reductions. The same kind of performance was turned in by the other groups, namely: the wet mixing plants and the general plants.

Observation and statistics join to establish our case that: 1. There is a great need for improvement. 2. The "know-how" and programs are available for the asking. And, 3. Top management has full responsibility for action.

I now come to a point in this talk for which perhaps you have been waiting. In conclusion, in the final analysis under the American system of private enterprise, which prevails in our great country, the initiative and responsibility for making industry safer rest with management. The government can and does assist, but it must not usurp. It is absolutely essential that we stop evading, excusing ourselves, putting off, and blaming each other for a sorry situation. Collectively and individually, let's pick up the challenge and get on with the job. That, ladies and gentlemen, is my parting word.

*Talk presented before Fertilizer Safety Section, 19th annual Southern Safety Conference and Exposition, Memphis, Tenn., March 3, 1958.

Series of Weed Sessions Scheduled in Canada

WINNIPEG — Manitoba's weed commission in co-operation with the University of Manitoba and the dominion experimental station at Brandon has planned a series of weed control conferences for farmers starting March 10 through March 28.

Prime purpose of the conferences is to bring farmers up-to-date on progress being made with chemical weed control and to present recommendations passed by the western Canada Branch of the National Weed Control Committee.

The wild oats problem, control of hard-to-kill annuals, control of Canada thistle and perennial sowthistle, hazards of using herbicidal products, methods of application and the importance of a knowledge of weeds in relation to control measures are all slated for discussion.

New Supply Firm

PORTERVILLE, CAL. — The formation of a new company, Sierra Farm and Home Supply Co., was announced recently by the founder, William A. Hill. The company will deal in farm supplies and equipment. Besides Mr. Hill, other members of the new firm include Ray Hutchinson and Hans J. Hansen of Porterville and Melvin Santry, Jr., of Tip-

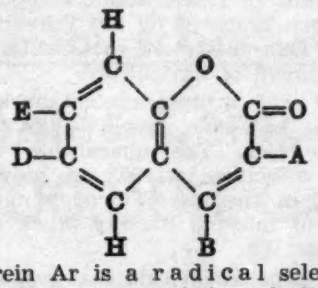
Industry Patents and Trademarks

2,824,822

Insect Repellent Method and Composition. Patent issued Feb. 25, 1958, to Lyle D. Goodhue, Bartlesville, and Kenneth E. Cantrel, Dewey, Okla., assignors to Phillips Petroleum Co. A ternary synergistic repellent composition comprising the following three components as the essential active repellent composition: (a) at least one di-n-alkyl ester of a dicarboxylic acid of pyridine wherein the alkyl groups contain from 2 to 4 carbon atoms, (b) at least one 1-acetoxy-3-phenyl-2-alkene wherein the alkene is an alkene having from three to four carbon atoms, and (c) at least one N-alkyl imide of bicyclo[2.2.1]-5-heptene-2,3-dicarboxylic acid wherein the alkyl radical contains not more than 12 carbon atoms, wherein said alkyl imide is present in the ternary composition in an amount in the range from 25 to 75 percent, on an undiluted basis of said ternary composition and the ratio of said ester of said pyridine carboxylic acid to said 1-acetoxy-3-phenyl-2-alkene is in the range from 4:1 to 1:4.

2,824,823

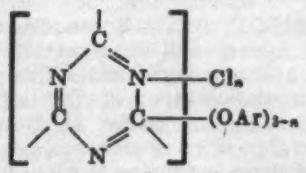
Triazine Fungicidal Compositions and Method of Applying. Patent issued Feb. 25, 1958, to Calvin N. Wolf, New York, N.Y., assignor to Pittsburgh Coke & Chemical Co. A fungitoxic composition consisting essentially of a fungicide having the general formula



wherein Ar is a radical selected from the group consisting of phenyl, naphthyl, hydrocarbon-substituted phenyl, hydrocarbon-substituted naphthyl, chloro-substituted phenyl and chloro-substituted naphthyl radicals, and n is an integer from 1 to 2 inclusive, an inert fungicidal adjuvant as a carrier therefor and a surface active agent.

2,824,824

Insect Repellent and Method of Stabilizing Same. Patent issued Feb. 25, 1958 to Lyle D. Goodhue, Bartlesville, and Kenneth E. Cantrel, Dewey, Okla., assignors to Phillips Petroleum Co. A method of stabilizing an insect repellent composition comprising as an essential ingredient a compound selected from the group consisting of the diethyl-, di-n-propyl-, and di-n-butyl esters of pyridine-2,5-dicarboxylic acid and mixtures thereof which comprises adding thereto a compound selected from the group consisting of compounds having the formula



and mixtures of said compounds wherein A is one of hydrogen, bromine and chlorine, B is one of hydrogen and an alkyl radical containing not more than three carbon atoms, D is one of hydrogen, hydroxyl and a nitro radical, and E is one of hydrogen, hydroxyl, an alkoxy radical containing not more than three carbon atoms, and an amino group in which the hydrogen is substituted by not more than two alkyl groups containing not more than three carbon atoms and when E is an alkoxy radical, B is hydrogen.

Industry Trade Marks

The following trade marks were published in the Official Gazette of the U.S. Patent Office in compliance with section 12 (a) of the Trademark Act of 1946. Notice of opposition under section 13 may be filed within 30 days of publication in the Gazette. (See Rules 20.1 to 20.5.) As provided by Section 31 of the act, a fee of $25 must accompany each notice of opposition.

Sesoxane, in capital letters, for insecticide synergist for pyrethrins, allethrin, cyclethrin. Filed Feb. 12, 1957, by Shulton, Inc., Clifton, N.J. First use Jan. 29, 1957.

Design of oval, with word "Gordon's" in center, for insecticides, herbicides and wood preservatives. Filed March 15, 1957, by Gordon Chemical Co., Kansas City, Kansas. First use March 1, 1949.

Rose Leaf, in capital letters, for floral dust for the control of insects and plant disease. Filed April 29, 1957, by Diamond Black Leaf Co., Cleveland, Ohio, to Diamond Alkali Co., Cleveland. First use Feb. 27, 1957.

Siponate, in hand-drawn capital letters slanted upward to the right, for surface active agents such as wetting, dispersing, penetrating, or emulsifying agents. Filed May 22, 1957, by American Alcolac Corp., Baltimore, Md. First use on or about March 4, 1957.

Northwest, in capital letters, for fertilizers. Filed Nov. 30, 1956, by Northwest Nitro-Chemicals, Ltd., Medicine Hat, Alberta, Canada. First use Oct. 12, 1956; in commerce, Oct. 12, 1956.

Nitro-Cubes, in capital letters, for fertilizers. Filed Nov. 30, 1956, by Northwest Nitro-Chemicals, Ltd., Medicine Hat, Alberta, Canada. First use Oct. 12, 1956; in commerce, Oct. 12, 1956.

Oregon Meeting to Have Fertilizer-Pesticide Session

PORTLAND, ORE.—A special fertilizer-pesticide program has been scheduled during the annual convention of the Oregon Feed & Seed Dealers Assn., which will be held March 13-14 at the Multnomah Hotel here.

The special program, to be held the morning of March 13, will include these speakers and topics:

Grant Braun, American Potash Institute, Portland, "The Fertilizer Potential of Western Oregon"; Dr. T. L. Jackson, Oregon State College, "A Potential New Field for Fertilizers and Forage Seeds in the Willamette Valley Area"; Todd Tremblay, National Plant Food Institute Northwest representative, "How a Farmer Decides Where to Buy His Fertilizer"; Dr. L. C. Glover, Shell Chemical Corp., San Francisco, "Agricultural Pesticide Developments by Industry."

FIRST check with NATIONAL POTASH...

Manufacturers of fertilizer can depend on NATIONAL POTASH for a coarse and standard grade muriate of potash.

- DUSTLESS
- FREE-FLOWING
- UNIFORM K_2O

Ample stocks and extensive storage and shipping facilities assure you of prompt delivery of both bulk and bagged potash even during the peak fertilizer season. In addition NATIONAL POTASH offers a Free Technical Service to aid fertilizer manufacturers. *Telephone, wire or write us today.*

NATIONAL POTASH COMPANY

205 EAST 42nd ST. • NEW YORK 17, N.Y. • ORegon 9-4950

212 Bell Building • MONTGOMERY, ALA. • AMherst 5-8234

Critics of Fire Ant Eradication Project 'Don't Understand', Alabama Official Says

MONTGOMERY, ALA.—Criticism of current efforts to stamp out the fire ant from a number of southern communities comes from people who do not understand it, according to A. W. Todd, Alabama commissioner of agriculture. Mr. Todd, with intimate knowledge of the situation in his state, points out that people in other parts of the country who do not appreciate the seriousness of the fire ant threat "have the idea that we intend to cover the entire South with insecticides all at one time." Bird lovers and others have expressed fears that the fire ant campaign would result in widespread killing of wildlife, including many fish and livestock.

That dangers to birds and animals in the areas infested by fire ant are being kept to a minimum, in the program to eradicate the pest, is noted by B. P. Livingston, chief, division of plant industry of the state department of agriculture. He describes the procedure as follows:

"We have never had any idea of covering the infested territory in one year. We hope to get probably one and a half percent of the acreage in Alabama covered during the year of 1958. We do not use spray material or dust, but a granular material that will immediately fall to the ground and very little will adhere to foliage. We are using heptachlor on the fire ant work in Central and North Alabama.

"We have been using dieldrin since it was put on the market for white-fringed beetle control, using from two to five pounds per acre. We have never had any complaints about the loss of wildlife other than one man reported that he found one sick and one dead quail and two sick rabbits the next day after the dieldrin was applied. This was applied as a surface treatment in a nursery. Since then, our inspectors have been working in this nursery and have noticed about the same number of quail that they had seen there before.

"From all reports, we believe that there will be less wildlife casualties from the use of heptachlor than there will be from the fire ants and some other predators. We do not put this material in streams when using airplanes. We flag off the streams and treat the territory nearby either by hand or with ground equipment. We have treated around some fish ponds here in Montgomery County within the last thirty days with ground equipment. We have had one heavy rain and probably some lighter rains since then, but have not been able to find any dead fish.

A. W. Todd

"Some people have the idea we are putting this material out indiscriminantly without any concern for wild game and fish—this is erroneous. Experienced men are putting this material out; also, we are cooperating with the wildlife people in the conservation department here in Montgomery and at our agricultural college in Auburn."

Cauliflower: left, boron treated; right, brown curd with boron deficiency
Alfalfa yellows and rosetting due to boron deficiency
EXAMPLES OF BORON DEFICIENT CROPS
Apples with external cork cracks, necrotic areas and dwarfed
Tobacco with die-back of terminal bud rolling of upper leaves
Choose the most ECONOMICAL SOURCE of BORON for your requirements...
If your need is this
Team up with this
MIXED FERTILIZERS
1. Complete Fertilizers
2. Granulated Fertilizers
3. Granular Blends
FERTILIZER BORATE-65 Concentrated
or
FERTILIZER BORATE-46 High Grade
LIQUID FERTILIZERS
or
FOLIAGE APPLICATIONS
SOLUBOR® (POLYBOR-2)®
or
BORAX FINE GRANULAR
United States Borax & Chemical Corporation
UNITED STATES POTASH COMPANY DIVISION
NEW YORK CITY • LOS ANGELES, CALIFORNIA
Agricultural Offices:
AUBURN, ALABAMA • 1st National Bank Bldg.
KNOXVILLE, TENN. • 6105 Kaywood Drive
PORTLAND, OREGON • 1504 N.W. Johnson St.

Repeal of Hall Scale Quarantine Proposed

SACRAMENTO—Repeal of the six-year quarantine against Hall scale in the cities of Davis and Chico, Cal., has been proposed by the Bureau of Plant Quarantine of the California Department of Agriculture.

Hall scale attacks almond, apricot, cherry, nectarine, peach, plum and prune trees. The quarantine was made effective in 1952 to prevent spread of the insect through movement of infested nursery stock and cuttings.

The department said that repeated treatment of host plants in the quarantined areas had reduced the program to a point where quarantine no longer was necessary. Surveys will be continued for at least three years in the areas where the scale has been found previously. If it is not discovered in the three-year period, the department will declare the pest to have been eradicated in California.

The Hall scale eradication program in California has been carried on since 1941 as a joint project of the California Department of Agriculture, U.S. Department of Agriculture and the agricultural commissioners of Butte and Yolo counties.

Since discovery of the scale in the U.S. Plant Introduction Gardens near Chico in 1934, nine infestations have been treated at a cost of approximately $1,500,000 and with 50,000 host trees and shrubs involved.

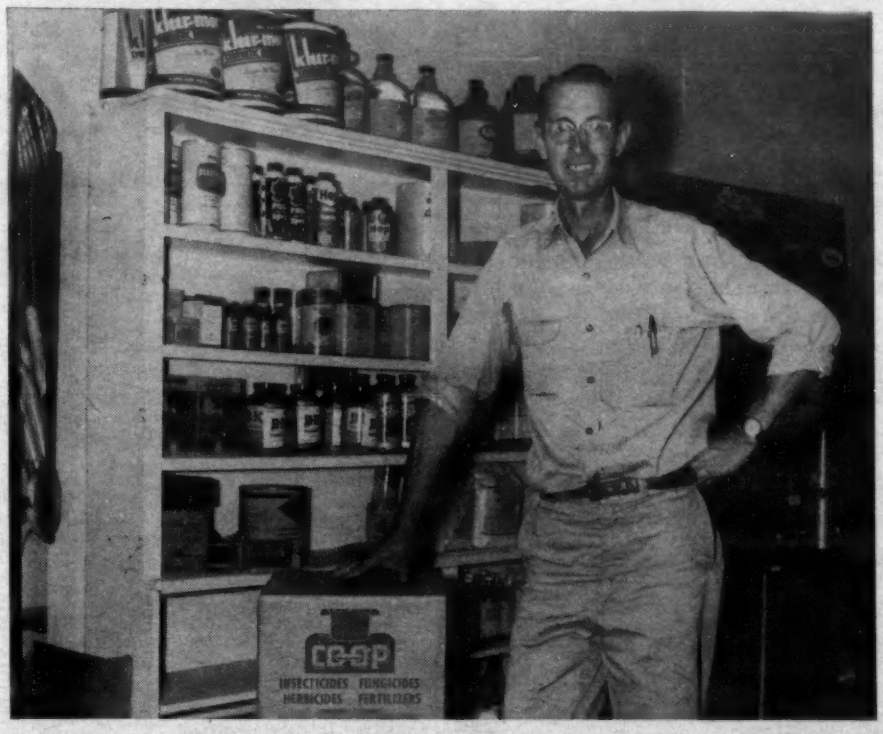
South Carolina Plans Weevil Control Tests

CLEMSON, S.C.—South Carolina county agents will demonstrate the use of granular insecticides this season for the control of the alfalfa weevil, according to W. C. Nettles, leader, Clemson entomology and plant disease extension work.

The alfalfa weevil first appeared in South Carolina last season and caused serious damage in Fairfield, Florence and York counties. It is expected to spread to all alfalfa fields in the state, Mr. Nettles said.

BLACK SHANK INCREASING

LEXINGTON, KY.—Black shank disease is on the upswing in Kentucky tobacco fields, according to Russell Hunt, Kentucky agricultural extension tobacco specialist.



AGGRESSIVE SELLING—All-out selling—similar in intensity to a political campaign—helped Doug Bateman, manager of the Nyssa (Ore.) Co-Op Supply build fertilizer product sales last year. He plans to have a better year in 1958. Mr. Bateman, shown here in the store, believes in learning what a product will do, then sell this knowledge and enthusiasm over the product's capabilities to the customer.

OREGON DEALER SAYS

Sales Campaign Helps Sell 100,000 Gal. Liquid Nitrogen

By JESS BLAIR
Croplife Special Writer

Sometimes a store owner wonders what per cent of his sales come as a result of planned promotion efforts and how much would have come in with no promotion. Also he may wonder if he has had any influence in getting farmers to use more fertilizer.

At the Nyssa (Ore.) Co-Op Supply there was a good way to check this first question. Manager Doug Bateman had been there only a few months when the 1957 season opened. The store had never kept liquid nitrogen before, yet sold more than 100,000 gal. before the season ended.

It did not come at the expense of mixed fertilizers, which sold as well as the previous year. It was mostly new business. Mr. Bateman and other employees talked liquid fertilizer to farmers; they had charts, pictures and figures from the experiment stations and farmers in other sections showing that more nitrogen would increase yields substantially.

"Farm chemicals don't sell themselves," Mr. Bateman says. "It takes an all-out effort, a campaign somewhat similar to that used in getting a political candidate elected."

Farmers were not equipped to apply liquid nitrogen, so Mr. Bateman got two pull-type rigs equipped with 150-gal. tanks and power driven spindles.

Whenever a farmer came into the store, he was told about liquid nitrogen and then taken outside where the applicators were parked. Here an employee explained how the attachments worked and what the service cost.

The man who usually did this was Sam Phillips, an ex-farmer who knows nearly everyone in the community. He was chosen as field supervisor because he was an expert with machinery, knew farming conditions and was well liked by the farmers.

When a farmer used the rigs, Mr. Phillips went to the field with him, helped get the job started, and stayed until the land owner understood it. After that, he usually visited the place every day to see if there were any break-downs or problems.

Even when the farmer wanted to use his own applicator, Mr. Phillips often helped him fill the tank and get started.

The store sells several types of agricultural chemicals. The sale of insecticides, herbicides and animal health remedies increased substantially over the previous years. Mr. Bateman also has a farm store department which helps bring in revenue during the cold months when the ground is frozen.

Mr. Bateman was not a college-trained specialist in farm chemicals, though he had a wide knowledge of farming problems. When he started selling farm chemicals, he made a thorough study of their contents and what they would do. He has worked closely with the county experiment station, the agriculture colleges and experts sent out by the manufacturers. He learned the various soil types, the plant nutrients needed, and the various kinds of insects in the area.

"Being a college graduate in one of these fields would be an advantage," he said, "but any dealer can learn a lot of sound practical knowledge about his products if he will work at it a few months."

This year he expects the sale of nitrogen fertilizer to double. Farmers who applied the nitrogen as recom-

(Continued on page 14)

SHOP TALK

OVER THE COUNTER

By Emmet J. Hoffman
Croplife Marketing Editor

The importance of selling a fertilizer program, not just a bag of fertilizer, is emphasized in the statement of Wayne Von Trotha, Simplot Fertilizer Co.

Knowing what fertilizer is needed must be the first essential information a dealer must acquire to sell fertilizer, Mr. Von Trotha says. This information can be gained by eliminating guesswork in recommending grades and rates of application. The dealer should educate himself about the product he sells, and then take the lead in promoting the use of fertilizer. Farmers are eager for information about farm chemicals and especially new products. How can the dealer improve his product knowledge and product promotion?

Mr. Von Trotha says, "The wide awake dealer will become friends with his county agricultural agent, the experiment station in his area, consult entomologists and fertilizer experts for information, and read diligently. Otherwise he can't keep up with a fast-changing field.

"We know what is needed in this area," says Mr. Von Trotha, whose territory includes the Swink, Colo., district, "It depends upon the soils and the kind of crops to be grown, but the most widely used blends are 20-20-20, 10-18-5, 6-24-6, and 7-14-7. The potash is somewhat new with some farmers, but is used for vegetables so they will withstand shipping better."

Another opportunity for the dealer is custom spreading. This field is wide-open and is growing rapidly, says Mr. Von Trotha. Farmers are operating larger units. They are becoming specialists and often prefer not to do general farm jobs. They would rather hire someone to spread fertilizer and other chemicals. Why buy equipment which can be used only a few days each year, they ask?

"This area is now doing quite a lot of custom spreading," says Mr. Von Trotha, "and it is profitable for the fertilizer distributor and farmer alike. Expert custom applicators know exactly what to put on and how to apply it. They can put cover on 20 acres an hour, while the farmer is free to be doing something else. And the superior skill of the professional applicator might make that farmer several hundred dollars more in profits."

By knowing what to use and how to use it, the Simplot company helped control the sugar beet maggot in eastern Colorado last year, Mr. Von Trotha says. Insecticides were mixed with fertilizer. On fields where aplications were made the depredations of the maggots were much lighter.

"Fertilizer is a business," says Mr. Von Trotha, "but it is a scientific business. The dealer must sell information along with every sack the grower buys."

"Is this the place that advertised for an aggressive outside fertilizer salesman?"

Washington Fruit Research to Expand

PULLMAN, WASH. — Washington State College and the U.S. Department of Agriculture have just completed plans to locate two new research men in the state to strengthen their programs for the fruit areas. One man will be located at the federal fruit insect research laboratory at Yakima, the other at the Tree Fruit Experiment station at Wenatchee. Both are USDA scientists.

Dr. L. L. Madsen, director of WSC's Institute of Agricultural Sciences, says, "We're most pleased that USDA has been able to locate these men with us before the start of another growing season. They will help us find solutions to some of the difficult problems facing our fruit industry today."

Location of additional scientists in the state had been urged for some time by various grower groups and the state college. Marvin H. Brunson will be located at Yakima.

Dr. Ford H. Harries, now stationed at Phoenix, Ariz., will move to Wenatchee to join the team of WSC and USDA scientists at the Tree Fruit Experiment station there.

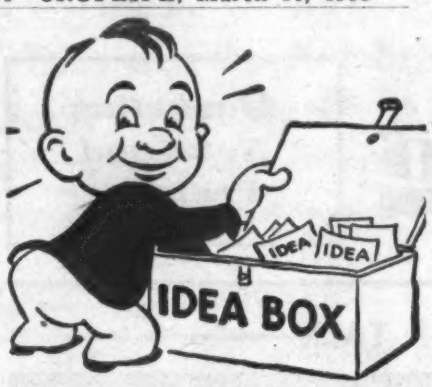
New Mexico Increases Vegetable Production

STATE COLLEGE, N.M. — New Mexico farmers produced over $7½ million worth of vegetables in 1957, according to a report from W. A. Wunsch, supervisor of the New Mexico State Department of Agriculture's Fruit and Vegetable Standardization Service. This was about $2 million more than the farm value of the 1956 crop.

The tomato acreage in 1957 was more than double the 1956 acreage; Grano, Spanish onions, and spring lettuce were tripled in 1957. The cantaloupe acreage last year was less than half the 1956 acreage. Chili acreage was also down.

Carrots ranked top in farm value, 1,420 acres yielding over a half million crates worth $1,661,000.

Next in farm value was Grano onions, 802 acres producing over a half-million 50-pound sacks which sold for $1,404,000; 525 acres of Spanish onions yielded 413,000 50-pound sacks which sold for $629,000.



What's New...

In Products, Services, Literature

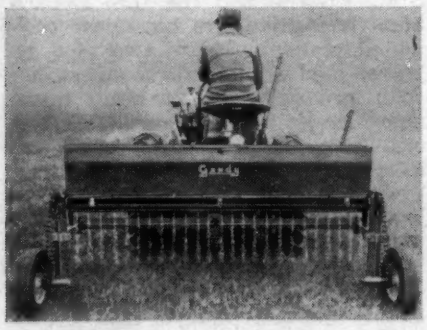
You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

No. 6699—Tank Gauges

A two-page bulletin issued by the Jordan Industrial Sales Division of the OPW Corp. describes the "OPW-Jordan" direct reading tank gauges. The gauges are recommended for liquid storage tanks up to 40 ft. in height. The bulletin describes features of the gauges and material specifications. Check No. 6699 on the coupon and mail it to Croplife to secure details. Please print or type name and address.

No. 6698—Applicator Attachment

A new multi-purpose fertilizer spreader or applicator attachment for use on tractor tool bars has been introduced by the E. S. Gandrud Co. Called the "Gandy Spred-N-Till," the new attachment is said to perform a number of field operations—broadcast or drill small grains and seeds; broadcast, drill, band, sidedress or deep-place fertilizer or granular chemicals such as insecticides. For broadcast applications the unit handles materials at the rate of 2 lb. to 4,000 lb. per acre. The applicator comes in 6-ft. and 8-ft. widths. Details may be secured by checking No. 6698 on the coupon and mailing it to Croplife.



No. 6701—Labeling Book

The Manufacturing Chemists Assn. has published proceedings of its 1957 Conference on Precautionary Labeling and is selling it from its office at 1625 Eye St., N.W., Washington 6, D.C. The 52-page book includes complete papers presented at the conference and a list of the 225 government, industry and publications representatives who attended. Please write directly to the Washington address for price information.

No. 6700—Electric Selector

The H. D. Hudson Manufacturing Co. has developed an electric sprayer and duster selector to determine the recommended sprayer or duster to use on a job. Hudson dealers can locate on the board the particular job to be done and insert a pointer into the proper hole. A light flashes alongside of the printed recommendation of a sprayer or duster. Check No. 6700 on the coupon to secure details. Please print or type name and address.

Also Available

The following items have appeared in the What's New section of recent issues of Croplife. They are reprinted to help keep retail dealers on the regional circulation plan informed of new industry products, literature and services.

No. 6694—Research Chemicals Booklet

"Research Chemicals from Dow," a new 40-page booklet, lists some 160 chemicals available in sample quantities from the Dow Chemical Co., Technical Service & Development. A substantial portion of the chemicals listed are being offered for the first time. The booklet is the first comprehensive listing for general distribution of products that are of interest to research personnel and available for sampling. Chemicals described are inorganics, saturated and unsaturated aliphatics, aromatics and heterocyclics. Each listing includes the chemical's name, formula, physical description, some typical properties and sample size available. Check No. 6694 on the coupon and mail it to Croplife to secure the booklet.

No. 6695—Booklet on Nitrogen Solutions

A technical booklet on nitrogen solutions for fertilizer manufacture has been published for the fertilizer industry by the Sohio Chemical Co. The booklet, written by Sohio's technical service department, is a reference handbook for fertilizer manufacturers. Designed for day-to-day use in plant operations, the booklet contains a 16-page section discussing manufacturing with nitrogen solutions, plus basic information on various nitrogen solutions. A section discussing fertilizer manufacture provides information in selecting solutions, along with a review of such topics as: Uniformity of ammoniation and absorption, reversion, temperature, alkalinity and acidity, hygroscopicity and solubility, and the use of urea and other specific materials. Other sections discuss granulation versus conventional mixing, considerations and calculations in formulation, and plant and personnel safety. The last section of the plastic-bound booklet includes product information sheets on various nitrogen solutions used in fertilizer manufacture, as well as aqua and anhydrous ammonia. Individual product information sheets as released by Sohio may be added to the booklet to keep product information up to date. Check No. 6695 on the coupon and mail it to Croplife to secure the booklet.

No. 6696—Grass Seed Mat

A new method to build a lawn will be introduced in 10 states this spring. The method consists of unrolling a carpet of grass seed on the soil, and watering it. Minnesota Mining & Manufacturing Co. has developed the product, which is a thin mat of green fibers containing grass seed. The mat clings to the ground, preventing the seed from being washed or blown away, preventing soil erosion, and retarding weeds, it is claimed. The mat disappears from view as the grass grows. The seed, blended for each climate, is imbedded evenly throughout the mat to assure uniform grass growth. Called "3M" brand grass mat, it will first be introduced in March and April in parts of New York, New Jersey, Connecticut, Michigan, Wisconsin, Minnesota, Iowa, Indiana, Illinois and Ohio. Secure details by checking No. 6696 on the coupon and mailing it to Croplife.

No. 6689—55-Gal. Steel Drum

Designed to save space and reduce handling and shipping costs, a new 55-gal. steel drum has been developed to interlock with adjacent containers when any number are unitized or packed closely together. Ray E. Frase (left), manager of the special products department for Signode Steel Strapping Co., and Vern I. McCarthy, Jr., vice president of Vulcan Containers, Inc.. point out the design of the rolling hoops which are the key to the interlocking feature of the new "Uni-Drum" container. When unitized, a group of the new drums can be handled by a standard lift truck, it

is claimed. Transit damage can be reduced because the drums contact each other at their six strongest points, the officials say. The "Uni-Drum" was developed by Signode Steel Strapping Co. in conjunction with Vulcan Containers which will manufacture and market the container. Secure details by checking No. 6689 on the coupon and mailing it to Croplife.

No. 5923—Bulk Scale

The newest addition to the materials-handling line of the Burrows Equipment Co. is a 1,000-lb. model 1200 bulk scale. Company officials said the "heavy-duty scale features a built-in Fairbanks-Morse scale to weigh any lot of material down to the ounce, accurately and quickly as it is handled." The unit is 38 in. high and 30 in. wide, and has a hopper 40 in. in length. All controls—two-wheel foot-brake, scale, dump

Send me information on the items marked:

☐ No. 5923—Bulk Scale	☐ No. 6692—Pesticide Carrier
☐ No. 5947—Bulk Storage	☐ No. 6693—Fertilizer Clamps
☐ No. 5959—Seed Treatment	☐ No. 6694—Chemicals
☐ No. 5966—Boxcar Unloader	☐ No. 6695—Nitrogen Solutions
☐ No. 6688—Seed Stimulant	☐ No. 6696—Grass Mat
☐ No. 6689—55-Gallon Drum	☐ No. 6698—Attachment
☐ No. 6690—Soil Fumigant	☐ No. 6699—Tank Gauges
☐ No. 6691—Tolerances	☐ No. 6700—Selector
(PLEASE PRINT OR TYPE)	☐ No. 6701—Labeling Book

NAME .....

COMPANY .....

ADDRESS .....

CLIP OUT—FOLD OVER ON THIS LINE—FASTEN (STAPLE, TAPE, GLUE)—MAIL

FIRST CLASS
PERMIT No. 2
(Sec. 34.9, P. L. & R.)
MINNEAPOLIS, MINN.

BUSINESS REPLY ENVELOPE
No postage stamp necessary if mailed in the United States

POSTAGE WILL BE PAID BY—

Croplife

P. O. Box 67

Reader Service Dept. Minneapolis 1, Minn.

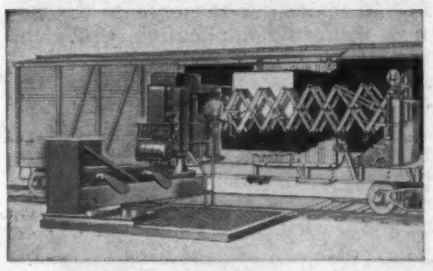
handle and pushing handle—are located at the rear, within easy reach of the operator. Standard equipment includes 10 in. rubber wheels at the front and 6 in. roller bearing swivel casters at the rear. Details may be secured by checking No. 5923 on the coupon and mailing it to this publication.

No. 6692—Silica Pesticide Carrier

A new spray-dried form of Zeolex 7A is now in production by the J. M. Huber Corp. Spray-dried pellets of the silica pesticide carrier yield higher absorptions and suspension values when airmilled or finely ground with toxicants such as DDT in the formulation of high concentrate wettable powders, it is claimed. The product packs tighter and saves more than 20% in storage space over the regular powder form, at no price increase, company officials claim. Check No. 6692 on the coupon and mail it to Croplife for further details.

No. 5966—Boxcar Unloader

Details of the hydraulically-operated boxcar unloader manufactured by Stephens-Adamson Manufacturing Co. have been announced. Company officials say that the unit can unload granular, pulverized or any free-flowing materials from large boxcars in less than 30 minutes. Features are: One-man operation; hydraulically-actuated boom swivel and scoop actions; positive digging and raking



actions; and operator is located on an operation platform outside the car. The boom and scoop can be set into automatic operation but the operator can stop the cycle at any time to redirect the boom. Further information may be obtained by checking No. 5966 on the coupon and mailing it to this publication.

No. 5959—Alfalfa Seed Treatment

Details of a new systemic insecticide made by the American Cyanamid Co. to combat the spotted alfalfa aphid during the early stages of growth in alfalfa fields have been announced. The product, called by the trade name, Thimet, was recently cleared by the U.S. Food and Drug Administration for treatment of alfalfa seed prior to planting, according to Cyanamid. Officials state that this treatment "will control the spotted alfalfa aphid on seedling alfalfa plants for a period up to six weeks after emergence." Later the product breaks down so that there is no residue problem in the hay, it is claimed. Seed which has been coated with "Thimet" germinates and allows the product to be taken by the seedling rootlets into the plant where it remains up to six weeks. After the product's potency disappears, conventional type insecticidal sprays or dusts are suggested. Seeders need to be adjusted when treated seed is used because of the added bulk. Company officials state that leafhoppers, mites and other sucking type pests of alfalfa are also controlled through seed treatment. Details may be secured by checking No. 5959 on the coupon and mailing it to this publication. Please print or type name and address.

No. 5947—Bulk Materials Storing

The latest information concerning Day equipment for storing and handling bulk materials is contained in a bulletin prepared by the Day Co. Descriptions, specifications and dimensions of the company's vertical tanks and horizontal tanks are included. Pneumatic conveying systems, bulk material handling accessories and custom fabricating are also discussed. The bulletin contains photographs of typical bulk material tank installations.

No. 6688—Seed Stimulant

Merck & Co., Inc., has available a "technical service use direction sheet" describing "Gibrel Seed Stimulant 88." The material is intended primarily for seed producers and processors, and it discusses characteristics of the seed stimulant, directions for use, methods of treating seeds, resulting germination of treated seeds, and early growth of seedlings. It also lists seeds which respond to "Gibrel Seed Stimulant 88." Secure the sheet by checking No. 6688 on the coupon and mailing it to Croplife.

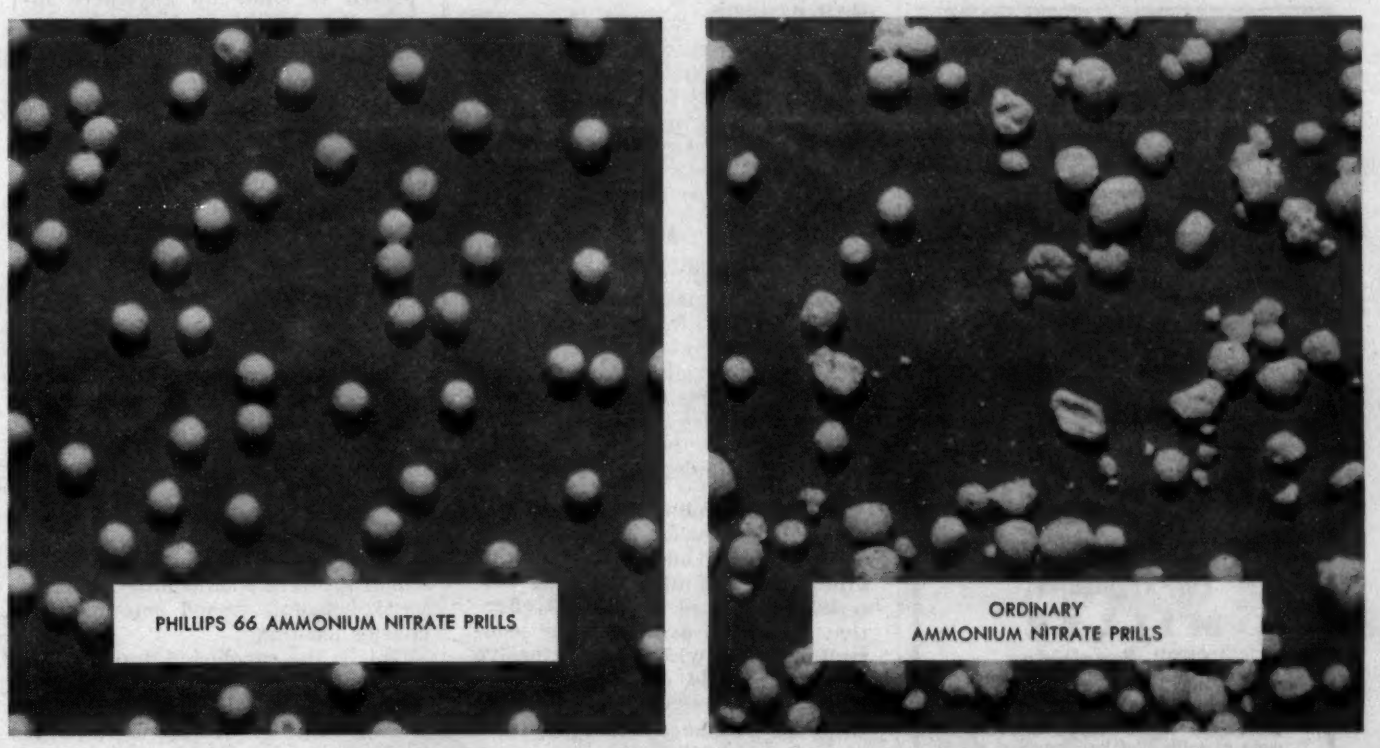
No. 6693—Liquid Fertilizer Clamps

Tiura Manufacturing & Sales has available a line of liquid fertilizer applicator clamps and shanks for distribution in the western slope area of the U.S. The products are intended for commercial applicators to buy, use and introduce to their customers. The clamps are available in several styles and sizes to fit standard or rounded shanks. They will fit 2-in. by 2¼-in. by 2½-in. square tool bars. The Tiura line includes the standard shank, the "Turk" shank and the "A-10" for specialized application. Secure details by checking No. 6693 on the coupon and mailing it to Croplife.

No. 5978—Seed Treater

A new automatic liquid seed treater which will treat 350 bu. of seed per hour has been announced by the Panogen Co. Designated the Model LC, the new treater is of the same basic design as the larger automatic treaters. It employs the same principle of weighing and metering the seed; the same principle of tumble-mixing in a rotating drum until seed is uniformly treated, and the same automatic clean-out to the last ker-

(Continued on page 14)



"EYE-WITNESS" PROOF

Unretouched Photos Show Dramatic Superiority of Phillips *66* Ammonium Nitrate

The evidence is there for all to see . . . new, guaranteed free flowing Phillips *66* Ammonium Nitrate is made up of uniformly round, hard and dry prills that *stay that way* in storage and during application.

This is the big difference that can make a big *difference* in your sales . . . because Phillips *66* Ammonium Nitrate delivers free flowing performance; and performance is what counts with you and your customers.

You get other extras, too, when you handle Phillips *66* Ammonium Nitrate. Consistent, convincing advertising of this outstanding product in leading farm papers; personal service from your Phillips *66* Fertilizer field man, and prompt deliveries are included in the profitable benefits of selling Phillips *66* Ammonium Nitrate.

Order your supply of Phillips *66* Ammonium Nitrate today.

PHILLIPS PETROLEUM COMPANY
Phillips Chemical Company, a Subsidiary, Bartlesville, Oklahoma

SALES OFFICES:

AMARILLO, TEX.—*First Nat'l Bank Bldg.*
ATLANTA, GA.—*1428 West Peachtree Street, N.W. Station "C" P. O. Box 7313*
BARTLESVILLE, OKLA.—*Adams Bldg.*
CHICAGO, ILL.—*7 South Dearborn St.*
DENVER, COLO.—*1375 Kearney St.*
DES MOINES, IOWA—*6th Floor, Hubbell Bldg.*
HOUSTON, TEX.—*6910 Fannin Street*
INDIANAPOLIS, IND.—*1112 N. Pennsylvania St.*
KANSAS CITY, MO.—*500 West 39th St.*
MINNEAPOLIS, MINN.—*212 Sixth St. South*
NEW YORK, N.Y.—*80 Broadway*
OMAHA, NEB.—*3212 Dodge St.*
PASADENA, CALIF.—*317 North Lake Ave.*
RALEIGH, N. C.—*401 Oberlin Road*
SALT LAKE CITY, UTAH—*68 South Main*
SPOKANE, WASH.—*521 East Sprague*
ST. LOUIS, MO.—*4251 Lindell Blvd.*
TAMPA, FLA.—*3737 Neptune St.*
TULSA, OKLA.—*1708 Utica Square*
WICHITA, KAN.—*501 KFH Building*

Phillips 66

FARM SERVICE DATA

Extension Station Reports

The true value of a ranch depends on the pounds of grass it can produce rather than the number of acres or livestock on it, according to a bulletin published by the Oregon State College Extension Service.

A livestock operation is one that turns grass and other forage into something that can be sold for cash, the bulletin points out. And since a hundred pounds of forage can produce only so many pounds of beef or mutton or wool, it's really the amount of grass and other forage a ranch can produce that determines its value.

Titled, "Grass is the Wealth," the new bulletin opens by explaining eight simple facts about grass that are said to be the first steps toward planning a range improvement program. Value of perennial grasses over annuals, how top growth depends on root systems, amount of moisture needed to produce a pound of grass, and how pasturing affects grasses are just some of the facts covered.

Range grass growth is seasonal, but livestock eat every day, the bulletin also points out. This creates a real problem for ranchers who need forage the year-round. The bulletin helps solve this problem by listing seven ways ranchers can even out the productive seasons of their pastures.

It then goes on to suggest ways to improve range lands east of the Cascades. Balancing feed consumption with production, use of water holes and salt to spread grazing, tricks with fencing, and range clearing methods are among the seven ways listed.

★

County agricultural agents in 56 Texas counties last year conducted approximately 1,800 demonstrations on the control of leaf-cutting ants with excellent results. A summary of the county reports released by Extension Entomologist F. M. Fuller showed that 96% of the colonies treated were brought under control.

This outstanding record was made by treating the cout ant colonies with odorized methyl bromide. Mr. Fuller said this material has proved to be most effective material available for controlling a pest which does extensive damage to field crops, truck gardens, fruit and shade trees and pine seedlings in the sandy soil areas of east and south Texas.

Mr. Fuller emphasized the threat which this insect poses to the pine seedlings which are now being planted in record numbers in east and southeast Texas. These ants, said Mr. Fuller, can completely destroy the pine seedlings if the areas planted are heavily infested.

The demonstration program for 1958 is now getting underway and will include approximately 70 counties. Methyl bromide for demonstrations in these counties is being supplied the county agents by a commercial concern.

Mr. Fuller in further commenting on last year's program, said one farmer reported a saving of $50 in crop production for each $1 spent for methyl bromide. The summary from Lee County estimated that the program saved farmers in that county $18,000.

★

Can antibiotics be used against seed-borne plant diseases?

Plant pathologists at the University of California think they can, if the proper materials and methods for treatment can be found.

Working toward this goal is Peter A. Ark, professor of plant pathology on the Berkeley campus, who helped pioneer antibiotic treatments against such plant diseases as fire blight and walnut blight.

What Prof. Ark and his associates hope to find is an antibiotic that will penetrate seeds without interfering with germination, then protect the seeds and the germinating plants against diseases caused by internal bacteria and fungi. Diseases of this type include fusarium rot on squash, a bacterial blight and a fungus blight on peas.

The researchers are using several commercial antibiotic preparations, including the cheaper, unrefined grades of Streptomycin, Actidione, Terramycin and Aureomycin.

Prof. Ark is also searching for new antibiotics, some derived from lower plants such as fungi and bacteria and others from higher plants such as garlic, peas and nasturtiums.

★

One reason for reduced barley yields in Kansas may be due to a seed borne virus disease considered unimportant till now.

The virus is barley stripe mosaic, according to Webster H. Sill of the department of botany and plant pathology at Kansas State College, Manhattan. In a recent check of 116 farmer seed samples, 25 were found infected by the virus. The samples came from 18 widespread counties.

Mr. Sill said losses from the disease are 50% in some cases, but usually have been less. Since the disease is seed borne, it can be expected to show up anywhere infected seed is planted.

Barley stripe mosaic has been found often in barley, but only twice in wheat. There are two known types or strains—one will infect oats, the other will not.

The disease has a wide host range, but so far has been of economic significance only on barley. It causes whitish to yellow mottling and mosaic on the barley leaves, accompanied by occasional brown stripes. Diseased plants are stunted and lack vigor. The disease is transmitted primarily by seed, but also to some extent by pollen and direct abrasive contact of diseased and healthy plants. An attempt is being made to eliminate seed lots in the state which are infected, Mr. Sill said.

★

For best control of citrus red mites, lemon growers should follow a treatment schedule based on their orchard's location.

This is the conclusion drawn by entomologist Lee R. Jeppson of the University of California's citrus experiment station, from studies he has made in the three principal climatic areas where California lemons are grown.

For coastal orchards, growers should treat for the mites in late June or early July, with a second application in October or November.

Orchards between the first coastal hills and the coastal mountains should be treated in August or September, with a second treatment in spring.

Range fertilization of native dryland ranges has provided a good bet in the Glenn County district of California, according to Monte Bell, Glenn County, California, farm advisor.

A decided increase in the quantity and quality of forage produced has been found. Forage response to nitrogen, sulfur, and phosphorus—the three elements usually deficient in rangelands—has been definitely demonstrated in both the laboratory and on large-scale rangeland tests.

Due to rangeland fertilization, these desirable effects have been noted:

1. Stimulation of early feed production.

2. More palatable feed.

3. Great increase in total forage produced.

4. Stocking rate on fertilized area can be much higher—allowing lower stocking rate on unfertilized fields.

5. Later maturing weedy plants are suppressed.

6. A great amount of dry plant residue remains on the fertilized fields for summer and fall.

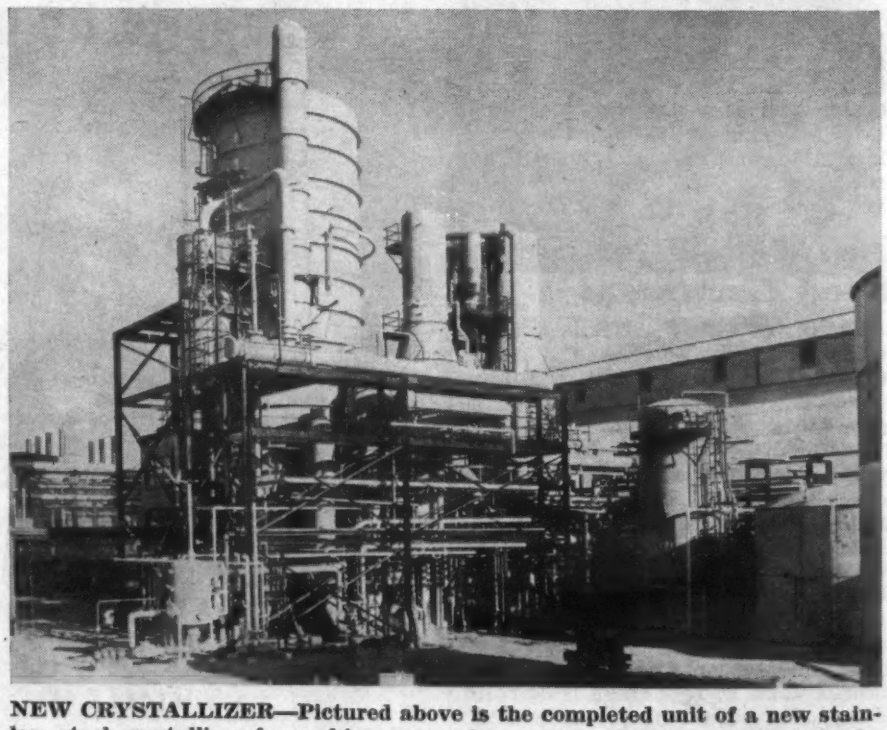
★

Alfalfa test plots at the Princeton (Ky.) Experiment Substation apparently made the best response to potash applications immediately after they were applied.

For that reason, say agronomists running the tests, "the general practice of top-dressing alfalfa following the first cutting might well be the best time of the year for applying potash."

The agronomists applied potash at several times during the year. The first was in early spring before growth started, and successively after the first, second, and third cuttings.

"Since the first cutting is usually large and coarse it does not seem desirable to apply the potash early in the spring, and thus increase this cutting. After the second cutting the alfalfa may not receive enough rainfall to make full response to the potash following application. Sufficient results have not yet been obtained from this test to determine if the total annual yield can be increased by various times of application of potash, or if only single cuttings are increased with no particular total increase in yield for varying the time of application," the testers said.



NEW CRYSTALLIZER—Pictured above is the completed unit of a new stainless steel crystallizer for making ammonium sulfate. This crystallizer weighs more than 150-tons, and is 82 ft. high and 20 ft. in diameter. The equipment was fabricated by Struthers Wells Corp., Warren, Pa., from type 316 stainless steel supplied by Allegheny Ludlum Steel Corp. The crystallizer was built in Hopewell, Va. for the National Aniline Division of Allied Chemical & Dye Corp. About 300-tons of ammonium sulfate will be made daily in the huge crystallizer.

YOU CAN DEPEND ON

MILLER

Soluble Fertilizers

And This Great Combination For Vegetables

MILLER

"658" Fungicide

(Formerly CRAG Fungicide "658")

Again Available!

Thoroughly tested copper-zinc-chromate complex that has provided excellent results for growers and in agricultural experimental stations.

- Controls diseases on potatoes, tomatoes, cucubitis, peanuts, citrus, avocados, azaleas and turf.
- Supplies needed Trace Elements —improves vegetable quality.
- Safe to use . . . no residue tolerance restrictions on harvested crops.
- Sticks better as spray or dust.
- Economical . . . does not break down in storage.

NUTRI-LEAF

"60" Soluble Fertilizer

Safe, easy nourishment for plants. Feeds quickly . . . can be mixed with insecticides and fungicides. 20-20-20 analysis with sticker and spreader. Hormone added to increase root growth and promote setting.

40% TEPP

INSECTICIDE

(KILL MITE 40)

The most potent phosphate insecticide against a wide variety of insects. Can be safely used without dangerous residue to crops within 72 hours of harvest.

- Kills mites that are resistant to other phosphates.
- Provides outstanding control of aphid, cabbage worms, etc.

TOMATO-SET HORMONE SPRAY

Increases the set, fruit size and yields of tomatoes. Can be applied with your regular insecticide and fungicide programs.

- First tomato hormone that can be applied as broadcast spray.
- Insures good crop during period when weather is unfavorable for fruit setting. Spray when blossoms are opening.
- Effectiveness proved by three years of research work.

WRITE FOR INFORMATION AND NAME OF NEAREST SUPPLIER

MILLER

CHEMICAL AND FERTILIZER CORP

2226 N. Howard Street

Baltimore, Maryland

Added Fertilizer Pays Off, Western Trials Indicate

SAN FRANCISCO—Large-scale trials for two years involving about 300 acres and 400 head of cattle in the Lincoln area of Placer County, California, showed increased production of over $6 per acre after fertilization costs were deducted, reports Walter H. Johnson, Placer County farm advisor.

Mr. Johnson said that smaller, well-controlled plots showed feed production doubled by one application of 300 lb. of single super-phosphate, trebled by 300 lb. application each of two years or a 600 lb. application one year, and increased 3½ to 4 times by heavier applications.

Two year production totals on the small plots (1956 and 1957 grazing seasons) show these results:

	Pounds dry matter per acre, two year totals
No fertilizer	2,091
300 pounds applied 1956 plus carry-over for 1957 ...	4,468
300 pounds applied both 1956 and 1957	6,596
600 pounds applied 1956 plus carry-over for 1957 ...	6,613
Heavier treatments	7,236-7,887

In addition, the percent of clover in the total feed was at least doubled in all but one case. With clover being relatively high in protein, the protein content of all the forage was increased by almost 50% in all cases where fertilizer was applied.

The vigorous growth of rose clover has apparently added significant amounts of nitrogen to the soil. Plots that have received ample phosphorus and have shown heavy clover growth are now exhibiting earlier, more rapid, and more dense grass growth.

An item of possible future benefit is the results pointing toward the use of plant analysis to determine fertilizer needs. Laboratory analyses of rose clover plants in both 1956 and 1957 indicate that fertilization response (from phosphorus) can be predicted by proper plant tissue analysis.

The large scale tests, where cattle weights measured the gains, show a remarkable similarity to the small plots when comparing two 300-lb. applications with one 600-lb. application and its carryover. Totaling two years, the beef production per acre was 135 lb. and 129 lb., respectively, over the control fields. Average daily gains of yearling steers on both fertilized fields were identical, averaging 2.39 lb., an increase of ¼ lb. per day over steers in the control fields. The increase in total production was due to increased carrying capacity as well as increased daily gains.

Fertilization costs for the two fields were a little over $11 per acre for the two years, or about $5.60 per acre per year. Increased gains were valued at over $12 per acre after paying the fertilization cost, or an increased return of $6.18 per acre as an average for the two fields.

Appointed to New Emulsol Sales Office

CHICAGO—Emulsol Chemical Corp., division of Witco Chemical Co., has added T. William Mather to its sales staff. Mr. Mather will make his headquarters in Emulsol's new sales office at Akron, Ohio. His territory will include Ohio, Western Pennsylvania, Upper New York State, West Virginia and Eastern Kentucky.

Mr. Mather was formerly with Colton Chemical Co., as manager of product development and marketing research; prior to that he was a technical representative for Atlas Powder Co. in its chemical division, serving a wide variety of industries.

Fertilizer Produces 7-Fold Increase in Rice Land Profits

SAN MARINO, CAL.—California rice farmers, who produce some 468,300 tons of rice annually, are being shown the increased profits that accrue to them through the proper use of fertilizers, according to the California Fertilizer Assn.

In a new bulletin on rice fertilization just released by the University of California, the authors point out that the results of many trials indicate that profits up to $66.05 per acre on fertilized land can be realized from the most judicious fertilizer use. This compares with a return of only $9.69 per acre from unfertilized land.

It must be emphasized that profits of this magnitude can only be realized by using the proper fertilizer with proper placement and timing of application, the association states. Otherwise excessive losses of nutrients and consequent loss of profits will occur.

University scientists have shown that nitrogen and phosphorus are the two plant nutrients most often lacking in California soils for best rice production. Nitrogen is particularly important and for high yields of rice most California soils need nitrogen fertilization.

New Seattle Office

SEATTLE—The Seattle office of Wilson & Geo. Meyer & Co., western distributors of agricultural and industrial chemicals, has occupied new quarters at 318 Queen Anne Ave., Seattle, R. A. Fulton, the firm's Seattle manager, has announced. The move, Mr. Fulton said, is to facilitate handling the firm's increased business in the Northwest, to provide more parking facilities for customers and to give the enlarged office staff more room.

Colorado Handbook of Plant Diseases Ready

FT. COLLINS, COLO.—The third edition of the "Colorado Handbook of Plant Diseases," an up-to-date listing of major plant diseases and methods of control, has been published by Colorado State University Extension Service.

The 230-page publication contains a list of all major diseases of field, vegetable and fruit crops and of flowers, trees and turfgrasses. Causes of the disease, symptoms and control methods are included.

The handbook sells for $2. It may be ordered from the Extension Service, Colorado State University, Ft. Collins. The remittance must accompany the order.

JUNE 26-29 MEETING

SUN VALLEY, IDAHO—The Idaho-Eastern Oregon Seed Assn. will hold its annual meeting June 26-29 at the Sun Valley Lodge here.

IMPROVED ANCHOR TREBLE

NOW DUST-FREE AND MORE UNIFORM

New production techniques and equipment at Western Phosphates' modern plant in Garfield, Utah, now make possible an improved Anchor Treble that is *dust-free* and more *uniform*. Uniform pellets give easy, free-flowing application.

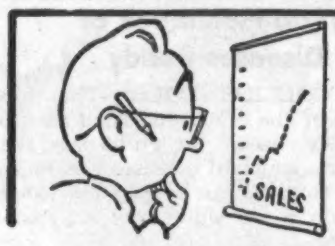
Whether you broadcast, drill, or apply by air improved Anchor Treble 45% guarantees your crops the highest total, highest available, highest water-soluble phosphoric acid — for profitable, early maturity and greater yield.

Western Phosphates' centrally located plant and network of in-transit warehouses make possible prompt delivery of *improved* Anchor Treble in straight car and truckloads or in combination with Anchor Ammonium Phosphates 16-20-0, 13-39-0 and 11-48-0.

Anchor Treble available now from your local fertilizer dealer.

ANCHOR BRAND

Manufactured by WESTERN PHOSPHATES, INC., Garfield, Utah
Distributed by WILSON & GEO. MEYER & CO., INTERMOUNTAIN
San Francisco, Los Angeles, Fresno, Phoenix, Salt Lake City, Denver, Portland, Seattle, Spokane



Doing Business With

Oscar & Pat

By AL P. NELSON
Croplife Special Writer

Oscar Schoenfeld was getting very fidgety. Since his desk was back to back with the desk of his tall, blue eyed Irish partner, Pat McGillicuddy, Oscar could not help see Pat hunched over his desk working on what looked like an ad or a direct mail folder.

And Pat had been at this most of the morning, writing something, scratching it out, then starting afresh. To work on advertising copy was a waste of time to Oscar. He did not believe in stimulating business through such promotions. He was a member of the old school—take what business comes your way, that is, ah say, cash business, as the Texan says.

Rotund, frugal, one-track mind Oscar figured Pat was wasting his time and what was worse, the partnership's time. Finally, he could not contain himself any longer.

"Ach, we do not need more advertising," he blurted forth. "We need collections made. We need somebody to walk in the warehouse every half hour to see that the men don't stand around and gossip, nicht wahr? I have been out there five times this morning and you haven't been out there once."

Pat looked up quizzically, and there was a flash of fire in his blue eyes. "So that is what's eatin' you, begorra. Calm down, Oscar. You're as edgy as a farmer angling for an extra discount on fertilizer. The men don't like somebody keepin' tab on them so much. And me—I'm doing something important."

"Himmel, is spending money important? I make money seeing we take the discounts, and you throw it out the front door."

Pat straightened a little angrily. "Is that so? If you would let the help do more of the book work, and if you would join me out selling somewhere, this company would have two salesmen, not one. No—on second thought, I wouldn't want you to sell. There would be too many complaints."

"Huh, you bet there would be complaints," Oscar growled. "I would tell those farmers a thing or two—those that owe us money."

"No thanks," Pat replied quickly. "Don't think about going out and selling. Stay right where you are—at that desk. I am sorry I mentioned it."

"I earn my salary," Oscar said in a dignified, proud voice. Then his eyes narrowed, but he said nothing more.

"And I suppose I don't earn mine, is that it?" Pat asked coldly.

Oscar said nothing. The office was the temperature of a sharp freeze room in a locker plant.

"You might as well know," Pat said slowly, "that as long as you are hooked with me as a partner, and as long as I am hooked with you, that I am going right on with sales promotion."

"And I," said Oscar through tight lips, "am going right on cutting costs. Somebody in this business has to have some sense."

Pat ignored the slam. "Oscar, the big danger every business man has to watch out for nowadays is not to get too standpattish. Not to get too satisfied with how he does business. The idea of 'this is the way we always did it, and it's good enough for the future' is out."

"Since when is collecting overdue bills out of date?"

Pat winced. That was his responsibility. "I will get at that—tomorrow. Right now I have worked out a little idea on how we can trace the sales we lost."

"The sales we lost? Ach, why spend money on them?"

"We want to know why we lost certain sales, so that we can see how the mistake was made and so we can avoid it next time."

Oscar snorted. "McGillicuddy, sometimes I think you are just plain foolish. I am sick of all these efficiency ideas so many men who think they are smart say we should use. They use so much time figuring out what we should do, that there is no time to sell and collect. Quit that dreaming. Ach, such monkey business."

Pat sighed patiently. "Some of the efficiency ideas are all right. This little 'lost sale' pad which I am going to have printed will cost less than $15 and whenever we want to we can have everybody in the firm fill out a slip everytime a sale is lost, even you and me."

"Me!" Oscar was indignant. "I will not do it. I do not have time for such foolishness, filling out slips. I have too much other important work to do."

Now it was Pat's turn to become indignant. "Oh, don't you lose any sales?"

"Of course not!" Oscar said sharply. "Those sales that are good, I take—for cash, or 30 days from good accounts. People who can't pay, I don't sell, so we don't lose."

Pat smiled thinly. "Well, others have their own opinions of how many sales you lose. This lost sales slip will call for some interesting information. Did we lose a sale because we didn't have an item in stock, or if the price was too high, or the customer thought he'd better look somewhere else first, etc.? Then we can look over those slips at the end of the week and see what we did wrong."

"I know what we are doing wrong without looking at slips," Oscar snapped. "I have tried to tell you many times, but, ach, you never listen. You stick your head in the sand. Himmel, you are stubborn."

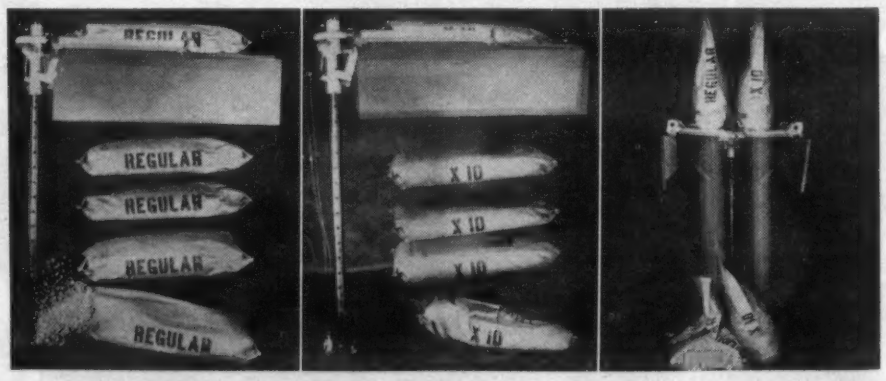
"I am stubborn!" Pat looked at his partner. "How about you? You fight every progressive move we make. You were against our adding an anhydrous ammonia line. You were against our going into selling and spreading bulk fertilizer. You don't believe in buying and stocking new products. Don't make me laugh."

Oscar's nose twitched in rage. "I don't care about new products. I don't care about pleasing salesmen by buying lots of their goods. I am in this business to make money, to protect my investment, ach, and that's all I'm here for. Let the other fellow take care of himself. That's his business, not mine."

"Sometimes we can make a lot of money by taking care of the other fellow's business," Pat said. "The customer's needs are our business. Customers expect us to advertise, to promote, to tell them about new products."

"Nein!" exclaimed Oscar quickly. "McGillicuddy if everybody would just stick to his own business, earn his own living, pay his own bills when they are due, and save some money besides, half the world's problems would be gone. The way some people throw their money away makes me sick." It was not difficult to figure out whom he meant on this score.

Pat's face was white as he got to his feet. "Well, every partnership is give and take, I suppose." He picked up the list of delinquent accounts which Oscar had placed on his desk two days before. "You will get your way on this—I'm going out to collect them. And I get my way on this—" he held up the copy on the "lost sale" pad. The door slammed so loud behind Pat that it shook the door frame.



TOUGHER PAPER BAG—West Virginia Pulp & Paper Co. has made laboratory tests of a stretchable paper which it calls "Clupak" kraft. New "Clupak" bags are claimed to have survived more than twice the punishment of conventional kraft paper bags. In the picture at the left a multiwall sack of conventional kraft ruptures as it strikes the floor. In the center picture a multiwall of "Clupak" expands and absorbs the energy of its fall, without breaking. In the picture at the right regular and "Clupak" sacks are butt-dropped side by side. The regular kraft paper breaks and the one made by West Virginia Pulp & Paper falls intact.

SALES CAMPAIGN

(Continued from page 9)

mended got from 20 to 40% higher yields, and are thoroughly sold on liquid fertilizer. Many of them had never used any kind of fertilizer until a few years ago. When they did start applying it, they used only small amounts.

Mr. Bateman tells them that a little fertilizer will help, but why not put on the amount needed. The only difference in cost between a light and heavy application is the price of the material.

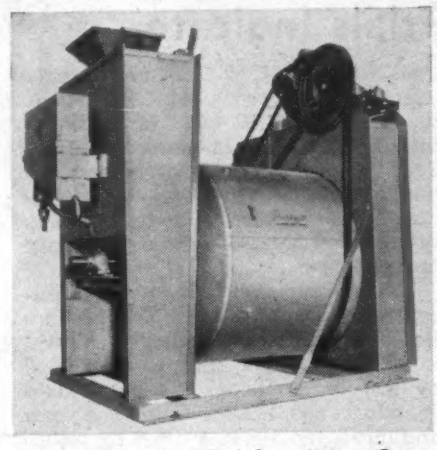
In promoting the usage of fertilizer, he did not urge every farmer to try it, particularly if he was a poor financial risk. Most sales were for cash. Where a farmer did ask for credit, the account was paid within 60 days. The few that ran more than this had an 8% interest rate added at the end of two months.

"One thing we've found," Mr. Bateman said, "was to make our sales pitch to the successful farmer. He is usually smarter, more open-minded and will make better use of the material. Another reason is that everyone is watching him and will be influenced by what he says.

"If you sell these good farmers on the use of fertilizer, the others will be easier to reach."

WHAT'S NEW

(Continued from page 11)



nel, company officials state. Once lines are attached to the shipping container of liquid seed disinfectant, treating can proceed all day long without stopping machine. No mixing or handling of chemical is required. The treater is shipped complete with ½ h.p. single phase motor and built-in exhaust fan for removal of chaff, seed dust, etc. Check No. 5978 on the coupon and mail it to secure details.

No. 6691—Diazinon Residue Tolerances

Geigy Agricultural Chemicals, Division of Geigy Chemical Corporation, announces that Diazinon residue tolerances of 0.75 ppm have been established for tomatoes, cabbage, cauliflower and broccoli. Growers may now apply Diazinon sprays or dusts to control aphids, leafminers and vinegar flies (Drosophila) on tomatoes; aphids, diamondback moths and imported cabbage worms on cabbage, cauliflower and broccoli. Details may be secured by checking No. 6691 on the coupon and mailing it to Croplife.

No. 6690—Soil Fumigant

"Mylone" pre-planting test applications on turf are giving good control of weed seeds, soil diseases, insects, and nematodes, according to Union Carbide Chemicals Company, Division of Union Carbide Corporation. The soil fumigant is now being used before planting to control soil pests in ornamental, tobacco, and certain vegetable seed beds, states Union Carbide. The company manufactures the basic chemical and supplies it to formulating companies which produce their own trademarked products, based on "Mylone," for commercial sale. The formulated dry product is distributed with a fertilizer spreader over the surface of the turf bed and then irigated into the soil. No plastic cover is needed on the bed. "Mylone" must be applied ahead of seeding or sprigging in the spring and allowed time to dissipate so it will not affect the young grass, the company explains. The product can also be used in the fall before spring planting. Secure details by checking No. 6690 on the coupon and mailing it.

Chemical Aids Western Easter Lily Growers

BERKELEY, CAL.—California and Oregon growers who supply most of the nation's $15,000,000 Easter lily crop are avoiding serious losses through a new chemical treatment.

Dipping in PCNB and Ferbam is preventing wholesale crop losses due to soil organisms.

Suggested by a University of California scientist here, the treatment is already being applied successfully by many growers.

In recent years growers have felt the pinch of reduced yields and increased production costs caused by the soil organisms, which rotted roots of Easter lilies, reduced flower numbers, slowed growth and stunted plants.

What's Been Happening?

This column, a review of news reported in Croplife in recent weeks, is designed to keep retail dealers on the regional circulation plan up to date on industry happenings.

The Minnesota Nitrogen Conference, held at St. Paul Feb. 20-22 featured representatives of Upper Midwest land grant colleges, the fertilizer industry, and experiment station personnel on the program. The extent of a great untouched potential for nitrogen use was emphasized by the speakers.

Niagara Chemical Div., Food Machinery & Chemical Corp. announced it is building a new pesticide plant at Greenville, Miss. In charge of the operation, slated to begin production this spring, is Horace W. Lee.

The eleven-man committee making a study of TVA fertilizer activities will continue to offer recommendations and suggestions to the agency for the long run. Its chairman, Dr. Earl O. Heady, Iowa State College, said members of the committee were presently making individual recommendations to TVA, but that the committee would operate as a unit later.

Soil bank policies for 1958, so far as the fertilizer and pesticide industries are concerned, presented a puzzling picture as Congress debated the political angles involved in the matter. No adequate answer to how the law might affect the industry appeared to be forthcoming immediately.

Final results of a survey made for the National Plant Food Institute by National Analysts, Inc., gave an enlightening insight on how farmers regard fertilizers. Soil tests, demonstrations rate high in helping the purchaser to make up his mind on what to buy, the survey indicated. The survey also indicated a need for education of the farmer on even the basic facts of what the grade numbers mean in terms of soil needs.

Paul Gregg, San Antonio, Texas, was named chairman of the Southwestern Branch of the Entomological Society of America at the group's meeting at Houston. He succeeded C. R. Parencia, USDA, Waco, Texas.

Dr. George C. Schweiker was named to the new position of manager of research for Velsicol Chemical Corp., Chicago.

Delhi-Taylor Oil Corp. announced that it will develop plans for a $20 million potash mine and mill in eastern Utah.

Planters Chemical Corp. announced that it is building a new dust blending operation at Fayetteville, N.C. for insecticides, fungicides and weed killers. The new unit was scheduled for opening in April.

Russell B. Stoddard, Fairfield Chemical Div. of Food Machinery and Chemical Corp., New York, retired after many years in the pesticide field. He said he would remain as a consultant for the firm, however.

The Western Cooperative Spray Project Conference was held at Portland, Ore., as was the fifth annual Northwest Agricultural Chemicals Industry Conference. Speakers emphasized the high cost of research that must be part of developing a chemical for agricultural use.

The annual pesticide school at North Carolina State College, held in January, heard talks on insect control problems, and a plea for closer cooperation between colleges and the pesticide industry.

Sinking of a potash mine shaft in nine months set a record when the Farm Chemical Resources Development Corporation's new mine was sunk in New Mexico. The shaft's maximum depth was 1,697 feet.

A new fertilizer firm, Basic G Industries, Inc., started operations at Houston. Plant capacity is 60,000 tons a year. The output will be distributed through 150 dealers.

The American Medical Assn. proposed a new model law covering labeling of "dangerous" chemicals. The proposal was a start toward uniformity in all states.

"Pest-O-Rama," a two-day pesticide conference at Montgomery, Ala., attracted thousands of people from the state to see exhibits, listen to talks by entomologists and others in the insecticide trade, and to learn more facts about the importance of pest control.

The Weed Society of America in its January meeting at Memphis, reported that weeds cost the American economy some $5 billion annually. Some 35 million acres were sprayed for weed control during 1957, the convention was told. Of this total, some 12 million acres were in corn. Dr. A. S. Crafts, University of California, Davis, was named president of the National group.

Iowa reported that only 7% of the farmers in that state applied insecticides to control corn borer, whereas 88% of the Iowa crop was infested with the insect. Another "severe" infestation was predicted for the 1958 season.

The value of early season control of cotton-infesting insects was stressed at the Mississippi Insect Control Conference held at State College, Miss.

A $200,000 superphosphate plant near Littlefield, Texas, was begun in January. It will be known as the Caprock Fertilizer Co., owned by Longhorn Construction Co., Sulphur Springs, Texas.

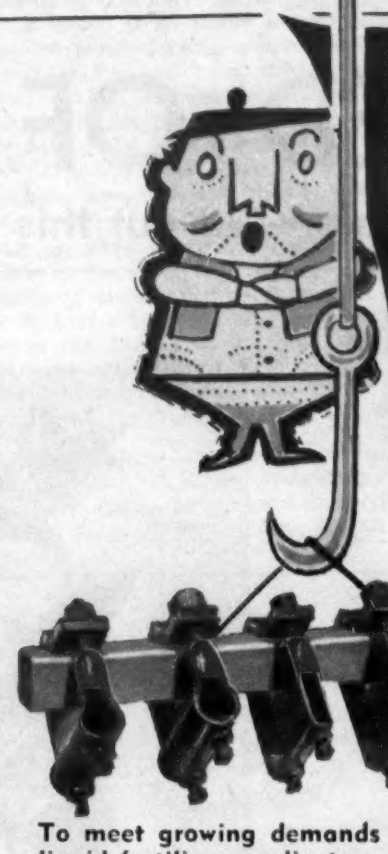
A new relatively non-toxic insecticide was discovered by USDA workers. It was claimed to have less toxicity than either pyrethrum or allethrin, but was slower in "knockdown" of insects.

Connecticut Valley tobacco growers have found their market for high grade leaf products to be drastically reduced because of new methods of cigar manufacture in which high quality plants are not necessary.

The Food and Drug Administration denied application for setting a tolerance of methoxychlor residue in milk. Thus, the product will not be used as a space spray in dairy barns, but may be dusted on cattle.

The U.S. Department of Agriculture struck back verbally at the charges made in a New York Times editorial that USDA was acting in an irresponsible manner in the fire ant eradication campaign. A spokesman for the Department said that domestic Tom cats killed more birds than would this entire campaign. The USDA also denied that it was "plunging ahead blithely" as the newspaper said, and declared that the entire program was planned with the cooperation of conservation and zoological officials and representatives of the fish and wildlife service.

There's MORE Strength in . .



"APPLICATOR" CLAMPS and SHANKS by . . . TIURA!

To meet growing demands for strength and durability in liquid fertilizer applicators—TIURA Engineers have developed the NOW famous TIURA CLAMPS and SHANKS for uniform high quality and long—rugged performance!

MORE AND MORE APPLICATORS "NOW" DEPEND ON TIURA APPLICATOR EQUIPMENT THAN EVER BEFORE — HERE'S WHY!

TIURA CLAMPS and SHANKS are made to perform under the most severe soil conditions . . .

. . . whether the requirement is minimum ground disturbance around delicate plants — or maximum soil tillage during fertilizer application — TIURA made CLAMPS and SHANKS do either job quickly — conveniently — and economically!

STANDARD SHANK

Combination tiller and applicator for double duty!

A-10

TURK SHANK

Less ground disturbance during fertilizer application.

Replaceable point — fast change — no hardfacing — no friction — fits ¾" x 2½" x 30" Shank.

INSIST ON BOTH TIURA MADE STANDARD AND TURK SHANKS WITH TIURA CLAMPS FOR GREATER UTILITY PLUS PROFITABLE PERFORMANCE!

Applicator Inquiries Invited

Quality Craftmanship TIURA Agricultural Equipment

TIURA MFG. & SALES

Highway 33 P. O. Box 1087

PATTERSON, CALIFORNIA

WEED OF THE WEEK

Mr. Dealer—Cut out this page for your bulletin board

Horse Nettle

(Solanum Carolinense)

How to Identify

This plant has an erect stem, loosely branched, and covered with yellowish spines. Height of the plant may vary from one to four feet. Leaves are alternate, oblong, wavy-edged or lobed, with yellow prickles on petioles, midrib and veins. Flowers are white or bluish, 5-lobed, about an inch across.

Where Horse Nettle Is Found

The weed occurs in fields, gardens, and waste areas, particularly those with sandy soils. Its distribution is rather general, with more in the eastern half of the nation. The plant is a native of North America and is a perennial, reproducing by seeds from creeping rootstocks. It flowers from May to September and seeds from July-November.

Control of Horse Nettle

A number of chemical herbicides are available to control this weed, although application of these materials may not be economical unless a small infestation is to be controlled. Agricultural authorities keep a watchful eye on alfalfa, clover and lespedeza seed lest horse nettle seeds should be included with the desired plantings and lead to an infestation. When once firmly entrenched in a field, a system of frequent and intensive cultivation is recommended by some weed control experts. Farmers are cautioned, of course, against the purchase of seeds containing horse nettle seeds. In some states, if these weed seeds comprise as much as one tenth of one percent of the total crop seeds, the label must give information on the number of weed seeds per pound.

Illustration of Horse Nettle through courtesy of U.S. Department of Agriculture.

ACREAGE RESTRICTIONS

(Continued from page 1)

increased acreages ineligible for price support, nor would they be eligible for soil bank acreage reserve program payments.

A similar bill had been introduced in the House previously by Congressman Paul C. Jones (D., Mo.) with one difference. The Jones Bill H.R. 10510, provides that the increase in permitted acreage allotments would be limited to 25%.

Both bills would grant permission for cotton farmers already in the soil bank under signed contracts, to cancel such commitments.

The actual effect of these measures on cotton acreage this year is largely a matter of opinion. From the House side, Congressman Jones told Croplife that he believes that the effect of a grant of permission to expand cotton acreage allotments this year would probably represent acceptance by about one half of farm acreage which would be eligible. In short, his feeling is that 12½% acreage expansion might be effected.

Both measures represent an effort to by-pass an obvious contradiction in the theory of the legislation and existing soil bank law. The cotton farmers are said to be badly in need of increased acreage this crop year since the soil bank could remove nearly 5.1 million acres. This would reduce the cotton acreage for the 1958 crop to something less than 12 million—a condition which would produce some 11 million plus bales of cotton. It was admitted even in Congress that an increase in acreage allotments plus soil bank reductions in cotton acreage through ARP payments would affront the intelligence of any thinking person.

More and more the cotton economy is leaning toward either an ending of price supports for that crop, or at best support at much lower levels than have recently prevailed. The price support level for the 1958 crop has been tentatively fixed at 81% of parity. But if there is no change in existing acreage allotment legislation, a small 1958 crop could readily cause USDA under its statutory requirements to boost that level of support upward substantially.

What do these alternatives mean to the plant food and pesticidal chemical industries?

The obvious conclusion seems to be that in either event the chemical industries will find active demand for their products. Cotton farmers who might work on the tight acreage allotment now in effect should find it advantageous to make maximum use of plant foods and protective chemicals to gain maximum yields. Even with maximum yields —even better than those of recent history—it would seem likely that with a soil bank operation removing upwards of 5 million acres, that USDA may have to increase the price support level for the 1958 cotton crop by as much as 3¢ lb.

If, however, some method of expanding cotton acreage this year is approved by Congress—(which seems necessary and has substantial backing in Congress)—it seems urgent that farmers who take advantage of any expansion of cotton acreage without the protection of price support at any level must of necessity act to gain maximum yields of good quality cotton.

This last comment is emphasized on the basis of current opinion here that any expansion of cotton acreage would be accepted only by about half of the producers—which would have the net effect of making the practical application of the proposed acreage expansion 12½ to 15%.

In the Senate, leaders agree that if the Ellender amendment is offered it probably will get the necessary two-thirds vote for a suspension of Senate rules whereby a legislative item can be attached to an appropriations bill. Normally the Senate and the House reject such items of legislation in the money bills.

Although Senate leaders agree the two-thirds vote for rules suspension is probable, there are some misgivings over ultimate passage in the Senate. Senator Ellender's office has expressed the fear that other farm group interests will jump on the band wagon and attempt to attach their own pet farm acreage or price support projects to the Ellender amendment thereby putting the whole proposal in jeopardy.

For corn, the legislative outlook remains unchanged from the doubtful prospects of last week. The soil bank has extended the time for withdrawal of all farmers from soil bank contracts until March 25. The purpose of this move as far as corn is concerned is to shake out some corn farmers who have pending applications for soil bank contracts. These contracts boost the total requirements for the corn aspects of the ARP phase of the soil bank to approximately $313 million. Since Congress now indicates that it will only increase the corn soil bank fund to $300 million, USDA officials at the soil bank see the necessity of shaking out corn farmers so that the total money requirements for that crop in the 1958 soil bank will be cut back to the $300 million maximum now likely to be made available by Congress.

As the acreage problem of cotton remains unsettled, some change may be in the making. It has been learned from reliable sources that USDA now contemplates setting the price support level for the 1958 crop at 78% of parity. According to these sources the flexible price support schedule which arbitrarily sets such levels of support shows the necessity of a support at the level indicated.

Thus far Secretary Benson has in regard to basic commodities held his price support adjustments to the level fixed by the provisions of flexible scale schedule of the farm act of 1949, and in regard to dairy products he also has failed to use full discretion to reduce them even further.

Whatever happens on the legislative front now it does not appear probable that any change or even a stand-still agreement on last year's price supports can work to the disadvantage of the plant food or pesticidal chemical industry.

Assurance of this prospect should persuade prudent producers to proceed as usual with their plans for accumulation of these necessary chemical products.

FORMULATORS,

Are you looking for...

✓ High Flash
✓ Direct Unit-Produced Uniformity
✓ Non-Phytotoxic
✓ High Solvency
✓ High Purity
✓ Proven Diluent

The Answer: ESPESOL 1

Under conditions where high flash is desirable, you will find Espesol 1 an ideal diluent. High aromatic content assures high solvency power and because Espesol 1 is a direct unit-produced solvent rather than a blended product, formulators know they can depend on consistent uniformity, run after run.

Tested and approved by government and college experiment and extension facilities, Espesol 1 is non-phytotoxic and offers a fast evaporation rate because of its narrow boiling range. For a proven, high-flash diluent, specify Espesol 1!

Available on short notice delivery from all of Eastern States' terminal facilities, Espesol 1 can be ordered in drum, transport, tank car, barge and ship tank lots.

Mail coupon below for complete information.

EASTERN STATES PETROLEUM & CHEMICAL *Corporation*

(Formerly Eastern States Chemical Corporation)
P. O. Box 5008, Houston 12, Texas, Phone WAlnut 3-1651
Chicago Office: 1011 Lake Street, Oak Park, Ill., Phone Village 8-5410
New York Office: 10 Rockefeller Plaza, New York, N.Y., Phone Circle 7-2520
Cleveland Office: 20800 Center Ridge Road, Phone Edison 3-0188

ESPECO

Eastern States Petroleum & Chemical Corporation
P. O. Box 5008. Dept. CL-3B-8, Houston 12, Texas

Please send me free booklet on the characteristics and properties of insecticide solvents.

NAME_____
FIRM_____
ADDRESS_____
CITY_____ ZONE____ STATE_____

U. S. TERMINALS: Houston, Texas Chicago, Illinois East Liverpool, Ohio Madison, Indiana Brownsville, Texas
EUROPEAN TERMINALS: Dordrecht (Rotterdam), Netherlands Antwerp, Belgium Ludwigshafen, Germany Livorno (Leghorn), Italy

North Carolina's Tonnage Down But Grades Improve

RALEIGH, N.C.—A drop of 8.05% in fertilizer consumption in North Carolina for the fiscal year 1956-57 is reported by the State Department of Agriculture. The total tonnage of mixed fertilizers and fertilizer materials sold last year was 1,516,587 tons, some 132,862 tons less than the 1,649,449 sold in the 1955-56 period. Comparative tonnages for other years were: 1954-55—1,830,633 tons; 1953-54—1,815,572 tons; 1952-53—1,849,863 tons; and 1951-52—1,900,904 tons.

Other information included in the report by L. Y. Ballentine, commissioner of agriculture, included the fact that in the fiscal year 1956-57, 96.79% of the fertilizer contained 18 units or more of plant food as compared to 96.47% for 1955-56. Figures for other recently preceding years were: 1954-55, 96.57%; 1953-54, 96.60%; 1952-53, 96.77%; 1951-52, 96.71%; 1950-51, 96.78%.

"The data also show that 84.94% of the tonnage contained 20 or more units of plant food as compared to 79.90% for 1955-56," the report says. "Figures for this item for other recently preceding years are: 1954-55, 76.29%; 1953-54, 73.09%; 1952-53, 72.05%; 1951-52, 68.29%; 1950-51, 64.87%.

"Of the fertilizer used in the state during 1956-57, grades recommended by the experiment station represented 81.96%. It is expected that this value will fluctuate from year to year, due to the fact that experiment station recommendations are subject to change. Two of the grades (3-9-6 and 4-10-6) selling in largest volume are no longer recommended by the station. This is a part of the procedure of working toward the more economical use of fertilizer by moving step by step toward the recommendation of higher analyses.

"The plant food content of fertilizer for the year averaged 4.14 units of nitrogen as compared to 4.02 for the prior year; 9.31 units of available phosphoric acid as compared to 9.35 for the prior year; and likewise 9.78 units of potash as compared to 8.83 for the prior year. The total average plant food content of fertilizer—nitrogen, phosphate and potash—was 23.23 units for 1956-57 as compared to 22.20 for the prior year."

California Chemical Employment Shows Gain

SAN FRANCISCO — Employment in chemical manufacturing industries in California reached a new high during 1957, according to a report from the division of labor statistics and research of the California State Department of Industrial Relations.

Average monthly employment for the year climbed to 39,100, an increase of about 2% over the 1956 monthly average of 38,300. Employment in November reached 39,600, the same as for the previous November, and the low was in April, when an estimated 38,700 were at work producing all kinds of chemicals including those for agricultural use. The 1955 average was 37,000, and the 1950 average was 28,400.

AT MIDWEST NPFI MEETING—The tenth annual joint meeting of midwestern agronomists with the fertilizer industry, held at the Edgewater Beach Hotel, Chicago, Feb. 13-14, brought together many personalities of the trade. It also marked the first meeting of the group under the auspices of the National Plant Food Institute which was joined last fall by the old Middle West Soil Improvement Committee. On hand for the two-day convention were officials of the NPFI and its Midwest regional office. In top photo at left are members of the NPFI executive committee. Standing, left to right: Dr. Russell Coleman, executive vice president, NPFI, Washington, D.C.; Howard Parker, Sylacauga Fertilizer Co., Sylacauga, Ala.; Dudley George, Richmond Guano Co., Richmond, Va.; Dean R. Gidney, vice president, U.S. Potash Co., division of U.S. Borax & Chemical Corp., New York; E. J. Bock, Monsanto Chemical Co.; and Paul T. Truitt, executive vice president, NPFI, Washington. Seated are Ralph Douglass, Smith-Douglass Co., Norfolk, Va.; C. T. Prindeville, Swift & Co., Chicago, chairman of the NPFI board of directors; and John A. Miller, Price Chemical Co., Louisville, Ky., NPFI president.

Second photo at top: members of NPFI Regional board of directors and advisory committee. Standing left to right: C. R. Martin, Miami Fertilizer Co., Dayton, Ohio; R. A. Garn, Farm Bureau Co-Op Assn., Columbus, Ohio; W. W. Venable, Cornland Plant Foods Co., Grinnell, Iowa; A. C. Norris, B. W. Norris & Sons, Rushville, Ind.; Zenas H. Beers, Midwest regional director, NPFI, Chicago; E. T. Potterton, International Minerals & Chemical Corp., Chicago Heights, Ill.; M. A. Blue, Consumers Cooperative Assn., Kansas City, Mo.; and Frank Nelson, Rath Packing Co., Waterloo, Iowa. Absent when the picture was taken was Marshall Smith, Smith Agricultural Chemical Co., Columbus, Ohio. Seated are L. E. Quiram, Central Farmers Fertilizer Co., Chicago; R. G. Fitzgerald, Smith-Douglass Co., Streator, Ill.; Richard E. Bennett, Farm Fertilizers, Inc., Omaha, Neb., president of the Middle West group and chairman, Midwest regional advisory committee, NPFI; and J. D. Stewart, Federal Chemical Co., Louisville, Ky.

Middle row, left to right: J. H. Beers, C. T. Prindeville, John A. Miller, and Richard E. Bennett. Second photo: Dr. W. H. Pierre, Iowa State College, newly-elected chairman, North Central soils research committee; Dr. W. P. Martin, University of Minnesota, chairman of Midwestern agronomists; and Charles A. Simkins, University of Minnesota, chairman of Midwest extension agronomists.

In the lower row are Mr. Beers; George M. Beal, Iowa State College; Dr. Russell Coleman; and Joseph M. Bohlen, Iowa State College, Drs. Bohlen and Beal presented a digest of dealer attitudes toward fertilizer.

At the lower right is Dr. A. J. Ohlrogge, chairman of the Middle West agronomists, presiding at the sessions. (Photos by Midwest regional office of NPFI)

SUBURBAN MARKET CITED

Maryland Program Emphasizes Precision Use of Pesticides

COLLEGE PARK, MD.—The emphasis of this year's University of Maryland program on agricultural pesticides was on precision use—such things as the right concentration of chemicals, accurate placement, proper timing and careful mixing.

Dr. Andy Duncan, University of Maryland vegetable specialist, set out this theme when he said that very few farmers any more use the wrong chemical, but many have not yet developed enough skill to get maximum benefits.

Some of the common mistakes made by vegetable growers, according to Dr. Duncan, include:

Boom set at wrong height, different types of nozzles used on one boom, insecticide nozzles used for applying herbicides and vice versa, nozzles aimed at wrong angles which cause spray patterns to converge instead of covering separate areas, insufficient pressure at booms (right pressure at tank doesn't necessarily mean right pressure at boom) and varying speed of tractor, causing uneven application.

Other speakers, by concentrating more on proper use than on new materials, helped to develop the impression that farmers are settled down to a businesslike acceptance of pesticides in place of the novelty and excitement of several years ago.

This year's program, presented at three locations, was called the Agricultural Pesticide Conference. For the past six years a similar program was presented as the Agricultural Chemical Conference. Sites of the 1958 program were Cambridge, La Plata and Frederick. All three programs were basically the same, with emphasis on vegetables in the Cambridge meeting and emphasis on tobacco in the La Plata meeting.

The conferences are sponsored by the University of Maryland extension service for the benefit of county agents, agricultural chemical dealers and salesmen, field men for processing companies and other professional agriculturists who sell or recommend pesticides. About 200 attended the three conferences.

Emphasis on the precision use of chemicals on farm crops reflected farmers' widespread acceptance of these materials, and a minor theme of the conference reflected another development on the chemicals front —a growing market in the exploding suburban population with its efforts at growing lawns, shrubs and shade trees.

Dr. L. O. Weaver, University of Maryland plant pathologist, said service to homeowners is getting more important in extension service work all the time. He pointed out that due to the constant demand for information on ornamentals, the plant pathology department has started a series of mimeographed leaflets which describe symptoms of common diseases and give recommendations. "We couldn't keep up with correspondence otherwise," he added.

Some of the topics that rated as highlights of the program, either because of new developments or renewed emphasis on existing problems, include:

Herbicides: Amino triazole got special mention as a poison ivy killer. "It doesn't kill poison ivy any deader than some other herbicides," said Dr. Paul Santelmann, extension weed specialist, "but it kills quicker."

The main note on Silvex, a brush killer particularly effective on oak and maple species, is that it be used only as a foliage spray. Silvex also looks "very good" for chickweed control in lawns, and one practical advantage is that it's available in small containers convenient for homeowners, speakers said.

Johnson grass is moving north, said Dr. Santelmann, and Maryland farmers are going to be hearing plenty about it. In western Maryland treatment still is usually on a spot basis, but on the Eastern Shore treatment already is on the acre basis.

It certainly behooves us to pay more attention to garlic control in wheat, Dr. Santelmann said, because markets are getting more strict on dockage. He added that the main cause for rejection on field inspection of wheat being grown for certified seed is garlic.

Weeds in Vegetables: There isn't a very satisfactory answer to weed control in beets, according to Dr. Duncan. But he told the agents and field men in the audience that "if you know any growers who might be interested, encourage them to try—on a test basis—CDEC, a pre-emergence treatment."

Dr. Duncan suggested that growers learn how to "juggle" CIPC and CDEC for weed control in spinach. These two complement each other, he said, and the amounts of each to use depend on the weed problem. The standard mix is 4 ounces of CIPC plus 1 lb. of CDEC in 25 to 50 gallons of water per acre.

Alfalfa Insects: The spotted alfalfa aphid, first seen in the U.S. in 1954, is now in the southern part of Virginia. "That's close," observed T. L. Bissell, entomologist, "and we can look for it here in Maryland." He did not see any danger, however, of the pest riding in on hay that is being imported this winter in larger amounts than usual due to last summer's drouth. The university is sticking by a previous recommendation to spray with malathion and heptachlor for alfalfa weevil.

Livestock Insect Pests: Recommendation changes are few, but important, pointed out Dr. Warren Johnson of the entomology department. He said that because the Food and Drug Administration has set up a zero tolerance for methoxychlor in milk, a former recommendation that methoxychlor be sprayed on at the rate of 4 lb. of 50% wettable powder in 50 gallons of water has been deleted. The new recommendation is to use 1 heaping tablespoon of 50 percent wettable powder, rubbed into hair on the neck, back and sides—and used not oftener than once every three weeks.

A forecast for next year's conference is that there will be news about several animal systemic insecticides, expected to be available shortly.

New California Firm

BAKERSFIELD, CAL.—Announcement of the formation of a new company was made recently by the firm of Mack, Bianco, King & Eyherabide of Bakersfield. To be known as King Chemical Inc., the new company will feature lines of fertilizers and fungicides and will headquarter at 100 Truxtun Ave., in this city. Directors of the company include E. C. Mazzie, James Bonaventure, and Kendrick B. King, all of Bakersfield.

CORNELL GRANT

ITHACA, N.Y.—Deane W. Malott, Cornell University president, has announced a grant of $250,000 to the university from the Rockefeller Foundation to support fundamental research and graduate training in plant physiology. The grant will be made available to the New York State College of Agriculture and will be used by scientists in support of their work over a period of five years or longer.

Donald G. Farmer Paul F. Smith

Douglas Chemical Co. Promotes Two in Sales

KANSAS CITY—W. C. McCaslin, executive vice president of the Douglas Chemical Co., North Kansas City, has announced the appointment of Donald G. Farmer as director of sales and advertising, and Paul F. Smith as sales manager.

Mr. Farmer has been with Douglas for six years. He started as district manager in Iowa and Missouri in 1952. One year later he became advertising manager for the Douglas Chemical Co. Mr. Farmer's offices are at the North Kansas City office.

Mr. Smith has been associated with Douglas since 1950. He has been district manager in Indiana, Ohio, Michigan, West Virginia, Pennsylvania and parts of Kentucky and Tennessee. He will also be located at the North Kansas City office.

New Representative

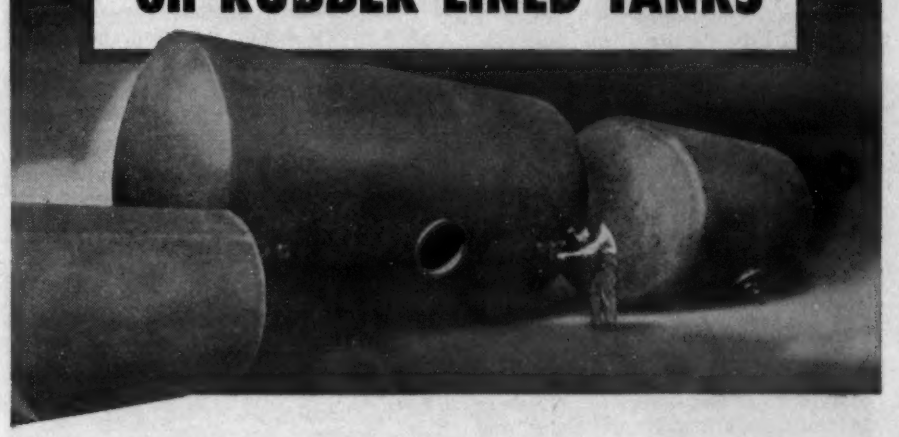
KANSAS CITY, MO.—Lewis Morgan has been assigned by Spencer Chemical Co. to the position of technical service representative in the Mid-South district, which includes Arkansas, Kentucky, Louisiana, Mississippi, Tennessee and Texas. He will make his headquarters at the company's Memphis office. Mr. Morgan replaces Charles J. Major, recently transferred to the Southeastern district.

Mr. Morgan, before assuming his new responsibilities, was a mechanical engineer in the gas reform and production departments at Spencer's Jayhawk Works in Pittsburg, Kansas, and prior to that was production assistant at Spencer's Fort Worth Works. He joined Spencer Chemical Co. in 1947.

IRRIGATION TEST FIELD

MANHATTAN, KANSAS—Kansas State College has leased a quarter section of land in the Bostwick irrigation district for the establishment of an irrigation experimental field.

Save time...
Save freight...
on RUBBER LINED TANKS



The Gates tank lining plant at Sioux City, Iowa, is staffed by specialists experienced in the making of a single product—top quality rubber lined tanks.

That's why processing can be done with unusual speed... and at surprisingly low cost.

And, because this plant is centrally located in the agricultural area, shipping costs, in most cases, are considerably lower.

Special "50 H" Lining stops tank corrosion

Gates "50 H" Rubber Lined Tanks will store—with complete safety—*all* high and low pressure nitrogen solutions, balanced fertilizers and phosphoric acids. Thus, these versatile tanks will give you corrosion protection from any fertilizer chemical you may want to use in the foreseeable future.

For complete information, write direct to

The Gates Rubber Company Sales Division, Inc. Denver 17, Colorado

TPA 307

Gates
ONLY Rubber Lined Tanks
store all liquid fertilizers safely
GATES RUBBER LINED TANKS

COTTON CONFERENCE

(Continued from page 1)

Monsanto compound 7769 for boll weevils and certain species of mites; and delnav, nialate, tetram and trithion for mites.

Early season cotton insect control is one of the key points in a successful cotton-producing program, a Canutillo, Texas, cotton grower told the conference.

Horton C. Miller reported that careful insect counts should be made early in the season. When the harmful insects begin to outbalance the beneficial ones, and when plant life damage is apparent, the proper insecticide should be applied immediately. Any delay, he pointed out, results in crop damage far in excess of the costs of the insecticide and application.

Mr. Miller suggested that cotton growers study the life cycles of the cotton pests in order to make their insecticide applications when they are needed. "Poor timing of crop inspections and application of controls is to waste materials, time and money, not to mention results—poor crop production," he said.

His own cotton insect control program, Mr. Miller said, usually consisted of two or three applications of insecticide just before the squares form and during early square formation. These first applications are made with tractor spray equipment while later season applications are made from the air in dust form.

"Good crop production is directly dependent upon control of harmful insects," he stated. "We practice early, intermediate and late applications of insecticides as may be indicated by the presence of harmful insects. Good timing and sufficient quantity of media are essential to good controls and a good set of fruit."

Efforts to control verticillium wilt, a disease which cut Beltwide cotton yields by an estimated 239,000 bales in 1957, were outlined at the conference by Dr. John E. Chilton, plant pathologist, Arizona Fertilizers, Inc., Phoenix.

Dr. Chilton said growers in the southwestern states have just completed a season in which verticillium wilt reached unprecedented distribution and severity. Growers in California lost 59,000 bales and those in Arizona, New Mexico and Texas close to 35,000 bales each. He added the outlook for stopping the spread of the disease is not good.

Outlining efforts to control the disease, Dr. Chilton said a rotation—using a dry fallow, grain or legume between successive cotton crops—will reduce damage. However, he feels the practice leaves something to be desired. Tests show rotation resulted in a 20% increase in yield, but the total yield was too low to be impressive.

Chemical fumigation with chlorpicrin is effective but not economical, Dr. Chilton said. He added, however, that experiments are under way to test the effectiveness of lower rates of chemical application, and after one year the results look promising.

"If any of this control can be carried into the second year, we will at least be within striking distance of economic use of this chemical," he said. "And I personally feel that we can look forward to newer, moderately priced chemicals which will eliminate wilt sclerotia from the soil."

The conference was told that western area cotton producers can expect nematodes to become even more of a problem in future years.

H. W. Lembright, nematologist for the Dow Chemical Co., San Francisco, told the conferees that since eradicating nematodes does not appear practicable, they must learn to live with the problem. He said that breeding nematode resistance into the cotton plant offers some possibility for the future but that fumigation is the best weapon we have now against nematode damage.

Mr. Lembright pointed out that cotton root-knot nematodes can cause losses ranging from one-fourth to three-fourths or more bale per acre, depending on the severity of the infestation. Fumigation against a slight infestation should return at least two dollars for every dollar invested, he said, and the returns from fumigating a heavy infestation should amount to more than six dollars for each dollar invested.

Other economic factors to be considered in deciding whether to fumigate are water and fertilization. The plant scientist reported that soil fumigation on infested land would maintain water and fertilizer needs at normal levels. He warned against over fertilizing and irrigating in an effort to overcome the setback of nematodes.

Mr. Lembright listed a five point program to follow for effective nematode control:

1. Recognition—the plant appears to be suffering from lack of fertilizer and water and has small swellings on the roots.
2. Turn under the preceding crop residue early.
3. Prepare the soil for irrigation and fumigation.
4. Inject the fumigant six to eight inches below the expected top of the bed at the time of planting when soil moisture and temperature are optimum.
5. Wait one to two weeks following fumigation before planting.

For soil fumigation to be practical, Mr. Lembright said, the grower should follow a good farming program. "This includes using recommended amounts of fertilizer, a recommended irrigation program, good weed, insect, and disease control programs and other accepted good farming practices," he pointed out.

Results of experiments using defoliants with wetting agents on cotton were described by Lamar C. Brown, plant physiologist with the U.S. Department of Agriculture and the University of Arizona.

The discussion was based on data from field and greenhouse experiments in which the effect of defoliants and defoliant-wetting agent mixtures could be correlated with variations in nitrogen fertilization, leaf conditions, plant maturity and temperature.

Use of wetting agents was described as one of the latest techniques to improve defoliation. Among the conclusions reached by the speaker are:

1. Use of wetting agents with defoliants appears advisable if the grower finds application conditions unfavorable. Agents increased both the amount and rapidity of defoliation when chemicals were applied under such unfavorable conditions as wilted and toughened leaves, immature leaves, low temperatures or conditions due to excessive nitrogen.
2. Use of wetting agents with defoliants did not retard defoliation.
3. Under conditions favorable for defoliation, use of wetting agents hastened leaf fall but there was no significant gain in total leaf fall.
4. Defoliant-wetting agent mixtures increased the amount of second growth defoliation, but such increases were not commercially important.

Recommended rates usually range from one to two quarts of wetting agents per 100 gallons of solution. However, rates may vary slightly depending on the agent used, location, and other factors, the speaker said.

Beneficial results from use of agents should not encourage growers to neglect proper precautions in defoliation applications, Mr. Brown said, pointing out that premature applications can result in a lower grade and yield.

"Also, the amount of defoliation obtained under unfavorable conditions, even if a wetting agent is used, will not equal that obtained when defoliants are applied under favorable conditions," he said.

A Texas "jetgun" that works like a water pistol and can hit a target the size of a dime or a dinner plate is being used to control Johnson grass in cotton fields of the state.

The jetgun was one of the pieces of equipment described by Fred C. Elliott, extension cotton specialist of the Texas A&M College system, at the production conference. He spoke on easier and more effective spot treatment of Johnson grass.

Equipment described included the Texas gravity-flow sprayer, Texas jetgun with the Texas blade and Texas slide-gun sprayer. The gravity-flow sprayer was used in Texas before the development of the jetgun, Mr. Elliott said, and added that the new sprayer is better under certain conditions.

The sprayer consists of a three-gallon back-pack spray can, connecting hose, a squeeze type diaphragm pump and a spray wand. The spray line, valves and nozzles can be adapted for tractor use in thin infestations. The speaker said this is preferred by some growers.

Cited as the "biggest news in Johnson grass control this year," the jetgun sprayer with the Texas blade permits efficient, economical and selective treatment of the pest with either oil or water sprays. Mr. Elliott said sprouts are never too close to cotton plants to prevent them from being safely treated.

Mr. Elliott said the jetgun was highly effective for selective application of a variety of oil and water sprays at College Station in 1957.

Six spot applications of a mixture of one-half naphtha and one-half kerosene at about 10-day intervals eradicated a 50% infestation of sprouts in irrigated cotton for $17.75 per acre for labor and materials. Similar use of Dalapon and water was safe and effective but slightly more expensive, Mr. Elliott said.

The speaker said the slide-gun sprayer is used for non-selective spraying of thick stands in spots where the crop is sparse enough to be sacrificed. He recommended the use of the gravity sprayer for crown-oiling thin stands of Johnson grass sprouts interspersed in cotton and other row crops.

Fruiting of cotton can be controlled within very narrow limits so the plant will retain more squares and set more bolls, according to Dr. V. T. Walhood, plant pathologist at the U.S. Cotton Field Station, Shafter, Cal.

Dr. Walhood told the conference that even under the best conditions, only one square out of three is retained by the plant to produce cotton. This means the average cotton field has a yield "potential" of from two to three times of what it actually produces.

Shedding is caused by many different factors, Dr. Walhood said, and added that the situation is complicated by the fact that cotton is an indeterminate plant. "This means that once flowering begins during the growth of the plant, it not only has to grow vegetatively but must develop bolls and new flowers at the same time," he said.

The difficulty in obtaining a chemical to prevent shedding in cotton is in contrast to a number of other crops where use of growth regulating materials has helped control fruiting.

Limited success has been achieved, Dr. Walhood said, with a compound, Duraset 20W, in setting more bolls in the Imperial Valley of California. During three years, small scale tests have shown increases in yield of from one-tenth to one-half bale per acre. These results, however, were not consistent with those from the San Joaquin Valley during the same three years.

The San Joaquin tests showed yield decreases as well as increases. Dr. Walhood said differences in application may have accounted for the varying results.

In describing experiments with gibberellins on field grown cotton at Shafter last year, Dr. Walhood said the chemical is the first to demonstrate the property of setting practically every treated boll. Since very small amounts have a positive action in setting bolls, he feels extensive studies are needed before gibberellins are used commercially.

"It has been demonstrated that the gibberellins can be extremely effective in controlling fruiting," Dr. Walhood said. "At least, we have the opportunity to test whether it will be feasible to put more bolls on the plant than it normally produces."

John H. Miller, agronomist at the U.S. Cotton Field Station, Shafter, Cal., told the conference that pre-emergence applications of herbicides have not proved to be an effective weed control method in California, adding that results are directly related to rainfall.

"The fact that rainfall of any consequence is neither normally expected nor desired—because of soil crusting problems—in many areas, places definite limitations on pre-emergence use of herbicides in western cotton," he stated.

Neither cultivation alone nor cultivation supplemented by flame is sufficient to control Johnson grass, the most wide-spread perennial weed in California cotton, Mr. Miller said. Spot treating with dalapon controls the weed better than hoeing, he said.

Use of soil sterilants and fumigants offers the best control method available for spot infestations of broadleaved perennials such as bindweed and white horsenettle, according to Mr. Miller.

Chemical Engineering Service
div. of
Manitowoc Shipbuilding, Inc.
MANITOWOC, WIS.
Manufacturers of
FERTILIZER PLANTS and EQUIPMENT

COMPLETE PLANTS
Dry Mix, Acidulating and Bulk Loading

EQUIPMENT
Dryers & Coolers
Dust Collectors
Pelletizers & Ammoniators
Continuous Acidulators
Mixers, Crushers, Screens
Weighing Systems
Elevators & Conveyors

COMPLETE UNITS
Bulk Loading, Bagging
Mixing & Ammoniating and Acidulating

SMALL LOCAL PLANTS
Building & Equipment to suit local conditions

Please write for complete information

Oklahoma Firm Announces Home Garden Contest

OKLAHOMA CITY — The 1958 Oklahoma Home Garden Improvement Contest has been announced by Earl Nichols, president of Nichols Seed & Fertilizer Co., Oklahoma City. The contest has total awards up to $3,175 in savings bonds.

Sponsors are the extension division, Oklahoma State University, the Noble Foundation of Ardmore, and Nichols Seed & Fertilizer Co., which supplies the county awards. Mr. Nichols said that this garden contest is in addition to the statewide program Nichols Seed & Fertilizer Co. has supported for several years honoring outstanding 4-H club boys and girls who complete horticultural projects.

Anhydrous Capacity Shows 1957 Gain Of 250,000 Tons

WASHINGTON — Anhydrous ammonia capacity in the U.S. on last Jan. 1 is estimated at 4,750,000 tons in 53 plants, and an additional 150,000 tons may be completed by the end of this year, according to the Business and Defense Services Administration, U.S. Department of Commerce. Anhydrous capacity was expanded by about 250,000 tons in 1957.

Production of synthetic ammonia during 1957 may have been close to 3,700,000 tons, for a gain of more than 10% over the 1956 output, the agency said. The 1957 production represented about 82% of the estimated annual capacity at the beginning of the year.

The agency said that a 5% increase in output of ammonia in 1958 appears probable. This would enable operators to continue to operate at an average of 80% of capacity.

Despite growing industrial uses for ammonia and its derivatives, the fertilizer industry still accounts for from 70% to 75% of total consumption, the agency said.

Urea output was approximately 20% higher in 1957 than the year before, and capacity is estimated to be sufficient to permit a further 30% increase in production in 1958, BDSA said. Three new projects with a combined annual capacity of 90,000 tons of urea are scheduled for completion by next fall, according to the BDSA which also said that deliveries by American producers of potash during 1957 were up about 5% over the 1956 total. A small increase in potash production and deliveries is expected in 1958, the agency said.

RICE LEAFLETS

BERKELEY — The University of California has issued two new leaflets for rice growers, leaflets number 97, "Weed Control in Rice," and number 99, "Establishing a Rice Stand."

MONTANA MEETING

(Continued from page 1)

phosphorus and 8% were low in potassium. Some 38% of the fields sampled were medium in phosphorus and 33% were medium in potassium. "It is very likely that a paying response to fertilizer applications would be obtained with fertilizer treatments on these fields," he observed. A total of 130,000 acres of alfalfa were included in the survey. Mr. Kittams stated that if a minimum application of P_2O_5 were applied to the fields needing the phosphate, about 8,000 tons of treble super would be required.

Drs. Murray Klages and Paul Brown emphasized the importance of soil moisture on fertility requirements of wheat in eastern Montana area. Good fertilizer responses to nitrogen and phosphate can be expected where soil moisture at planting time extends to a depth of 3 feet or more, and where a reasonable amount of precipitation falls during the growing season. Experimental work is being continued to pinpoint fertilizer recommendations to suit moisture conditions in the various areas.

J. O. Reuss and D. E. Baldridge emphasized the need of a high fertility program for corn grown for silage. They suggested the use of about 7 lb. actual N, and 2 lb. actual P_2O_5 a ton of silage produced. Yields of corn silage upwards of 40 tons have been obtained under conditions of good management on irrigated Montana soils, it was pointed out. The use of corn as a silage and grain crop is becoming more and more popular with farmers in the area because of greater net dollar returns per acre.

F. Todd Tremblay, Pacific Northwest representative of the National Plant Food Institute, emphasized the importance of soil testing and demonstration plots in promoting the proper use of fertilizers. Fertilizer dealers were urged to cooperate with the state college personnel to put the fertilizer story across to the farmers.

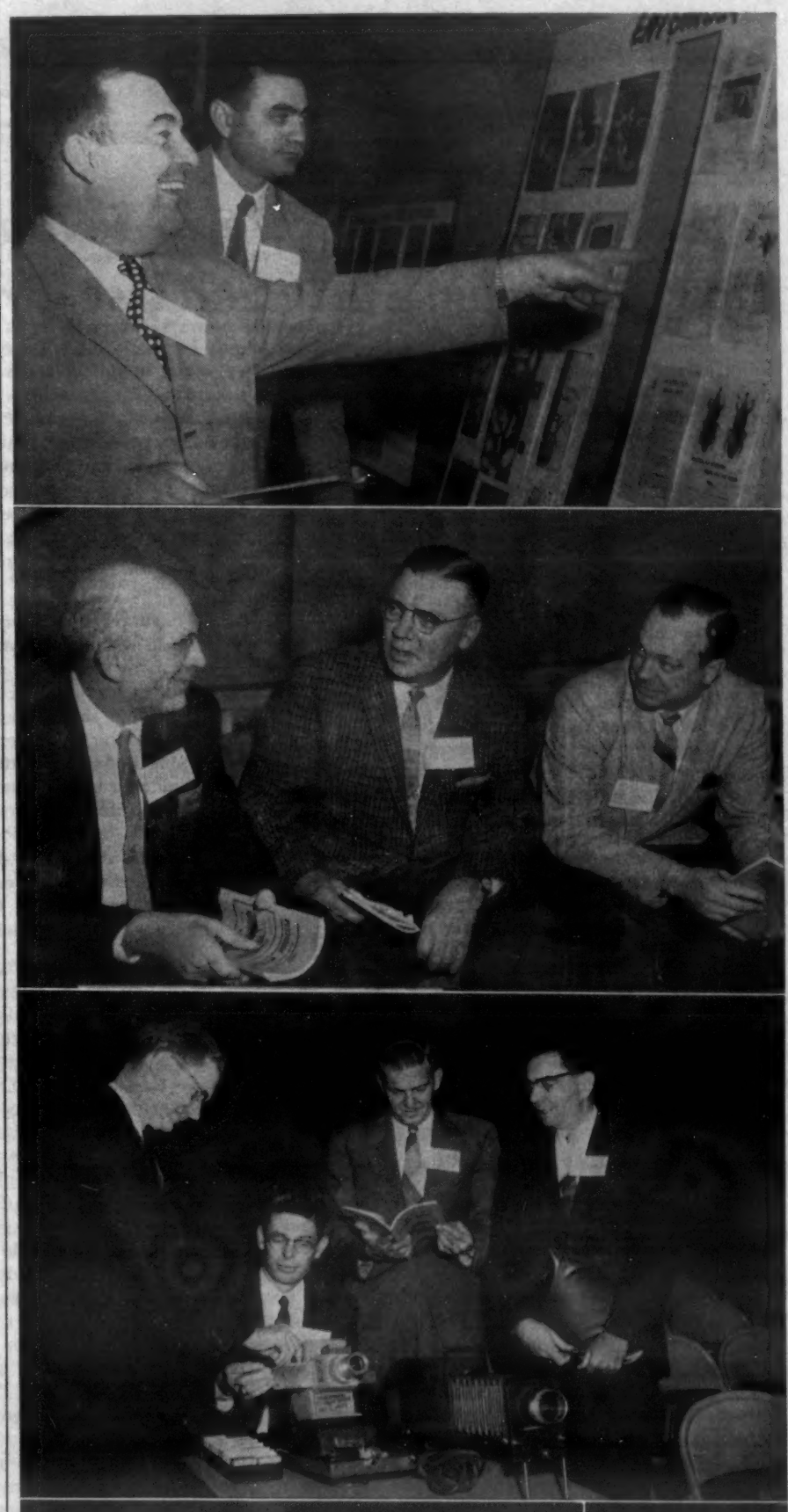
Prior to the fertilizer dealers' meeting, the Montana Plant Food Assn. held its first annual meeting at Montana State College. Art Wolcott, president of Farmers Union Central Exchange, presided over the meeting which was attended by approximately 20 distributors and manufacturer representatives serving the Montana area. One of the important amendments to the constitution was passed to allow dealers to become voting members in the association.

Newly elected officers were: Dean Travis, Jr., J. R. Simplot and Co., president; George Mason, Montana Flour Mills, vice president; and Ray McGregory, Phillips Chemical Co., secretary-treasurer. The organizational meeting for the MPFA was held in June, 1957 at Great Falls, Mont. The organization was formed for the prime purpose of promoting the proper use of fertilizer in the state.

Acreage Reserve Sign-Ups

WASHINGTON — Farmers signed and filed applications offering to put more than 8 million "allotment" acres of upland cotton, spring wheat, corn, rice and eligible types of tobacco in the 1958 Acreage Reserve of the Soil Bank through Feb. 21, according to preliminary reports received by the U.S. Department of Agriculture. Farmers through Feb. 21 had signed and filed applications for 3,076,998 acres of upland cotton, 3,934,353 acres of corn, 125,269 acres of rice, 82,332 acres of tobacco, and 4,881,514 acres of wheat.

MONTANA MEETING SPEAKERS—Among the speakers appearing before the Montana Fertilizer Dealers' Conference at Bozeman, Feb. 11-12 were the experts shown above. Left to right, they are: J. O. Reuss, assistant in soils, Montana State College; Dr. A. H. Post, head of soils and agronomy department, Montana State; A. F. Shaw, extension agronomist, Montana; F. Todd Tremblay, Pacific Northwest regional representative of the National Plant Food Institute, Seattle; and Harry Kittams, assistant soil scientist, Montana State.



AT NORTH CAROLINA PESTICIDE SCHOOL—Shown above are scenes from the recent tenth annual North Carolina Pesticide School, held in Raleigh. In the top photo Dr. H. E. Scott, North Carolina State College entomology department, and Dr. R. P. Upchurch, agricultural experiment station, talk over a pest control recommendation. In the second photo, are, left to right, J. Myron Maxwell, Maxwell Insecticide Co., Cary, N.C.; H. R. Garriss, college plant pathologist, and Bayard E. Swayne, Planters Chemical Corp., Lumberton, N.C. Shown gathered around the slide projector are four of the college's plant pathology experts. They are Dr. C. N. Clayton, F. A. Todd, J. C. Wells and Dr. D. E. Ellis. At left below, shown signing in, are Gordon Clark, State Chemical Co, Kinston, N.C., Jay Wright, Stauffer Chemical Co., Orlando, Fla., and LeRoy Thomas, Stauffer Chemical Co., Wilmington. Far right, below, is Dr. D. W. Colvard, dean of the college's school of agriculture, who gave the welcome address. A story of the conference appeared on page 1 of the Feb. 3 issue of Croplife.

Croplife®

A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL INDUSTRY

The regional circulation of this issue is concentrated in the Western states.

NPFI REPORT SUGGESTS . . .

Industry Has Key Role in Telling Farmer How Optimum Fertilizer Use Brings Profit

There seems to be no end to the far-reaching implications of results found in the National Plant Food Institute's recent survey on farmers' attitudes toward fertilizer. The facts published here in recent weeks and made public by NPFI show the farmer through the eyes of the survey as needing a great deal of education so far as plant nutrition is concerned.

It was indicated that he seeks information from county agents, the farm press, experiment stations, dealers and from friends and neighbors; but despite the excellence of some of these sources of knowledge, only a small percentage of the growers are using fertilizer at anything like the volume that would be of maximum benefit to them.

A summary of conclusions based on the findings of the survey tells some revealing facts about the efficient farmer, and also about his numerous counterparts who may work hard, but gain only a fraction of the efficiency and profits that could be realized with wiser use of available plant food.

The characteristics of the farmer who uses fertilizers on a high level appear to be consistent with current trends in farm population. The high level user has a bigger investment in lands and buildings, supplies, and equipment. He farms more acres, and has a more complex tenure arrangement in renting land beyond that owned by him.

The farmer of this type is not always a lone operator, sometimes having partners; and because of his efficient practices, makes more money per acre. Most of these farmers are better educated, have frequently had a course in agriculture, and are more business-like and managerial in their approach to farm operations. They are also more conscious of economic and market conditions and the effect these will have on the individual.

Farmers who use less than the optimum amount of fertilizer, on the other hand, have a different attitude. They regard fertilizer use as a goal to be attained and put it high on the list of things which characterize a good farmer. They say further that they would borrow money to purchase fertilizer and they look upon fertilizer as a good idea for pasture and for forage crops.

However, these farmers seem to prefer animal manure as fertilizer and consider the manufactured type of plant food as a substitute. Consequently, these farmers most often use what available animal manure they have on their most important crops.

This group is anxious about the future of farming in general. They generally see the future as being no better than the present, and frequently report that they did not make as much money as they expected in the past two years. At the same time, they lack plans for increasing their returns.

There appeared other inconsistencies in the story told by farmers who use less fertilizer than they should, according to the NPFI report. These farmers indicated that they know about fertilizers, occasionally have soil tests made, visit demonstration plots, discuss fertilizers and read about them and even make changes in fertilizing practice from one year to the next. Yet, despite their being exposed to fertilizer information and their knowledge of practical sources of information, they continue to use only a portion of the fertilizer that they could for best profits.

Does the fertilizer industry itself have a part to play in correcting some of the factors which seem to have a retarding effect on the farmer's understanding of plant food and how its use may be profitable? Some of the results of the survey suggest a few areas in which steps might be taken in this direction.

The farmer needs accurate and helpful information from sources which he sees as being practical, rather than theoretical. If the persons giving information are regarded by the farmer as being familiar with the farmer's problems and having approximately the same goals and objectives, the grower is much more likely to listen and take the action suggested.

Perhaps the industry could be helpful also in helping farmers to judge results from using fertilizer so they can view it as a known factor in production. The answers received in the survey indicate that rather than looking upon fertilizer as a means of gaining definite results, the user is more inclined to regard it as a known cost, with unknown and unpredictable effects. To offset this attitude, it might be possible to establish attractive demonstration plots where local farmers can see them frequently, thus encouraging them to do their own experimenting on a scientific basis.

Other factors lending themselves to greater use of plant food, as suggested in the survey, concerned financing of fertilizer purchases. The farmer needs a source of credit so he won't have to lay out cash at the time of year when his cash reserves are at a low point.

The farmer also needs help in spreading out the risk of buying fertilizer, since weather and other factors can intervene and diminish the returns from the investment in plant food. Perhaps credit on an actuarial basis could be arranged.

Help in evaluating a given expenditure for fertilizer in terms of possible return needs to be given. Such an evaluation of returns would be contrasted with other competing possibilities for increasing yield at the same level of investment.

The entire subject is one of such magnitude that it will take years of time and prodigious study and effort on the part of the plant food industry to put all of these suggestions into action.

Progress seldom comes swiftly in the agricultural field, and it would be too much to think the NPFI report, comprehensive though it be, has all the answers. But it is certainly a giant step in the right direction, and it now lies with the industry to make the most of the information it contains.

Safety Note for 1958

With custom aerial operators preparing to get into another season of activity, the subject of safety becomes once more a matter of concern. A recent talk on accident prevention by Charles L. Walker, operations specialist for the Civil Aeronautics Authority, outlined some of the considerations involved. Reviewing the accident record for 1957, he pointed out that most of the mishaps reported could have been avoided by the exercise of just a little more caution.

Quoting statistics for the eleven western states where he holds responsibility, Mr. Walker reported that hitting various objects was one of the greatest hazards, both in the air and in taking off. Of the 87 in-flight accidents, which took the lives of 21 pilots, 39 of these accidents were caused by striking powerlines, telephone wires, trees, guy cables, and windmills. Six mishaps came from running out of gas; a cause that is certainly the result of inattention. Like all phases of the pest control business, the custom operator bears a lot of responsibility . . . not only for his own neck, but for the lives and property of others.

Croplife's Home Office

Croplife

BPA — *Member of Business Publications Audit*

NBP — *Member of National Business Publications*

CROPLIFE is a controlled circulation journal published weekly. Weekly distribution of each issue is made to the fertilizer manufacturers, pesticide formulators and basic chemical manufacturers. In addition, the dealer-distributor-farm adviser segment of the agricultural chemical industry is covered on a regional (crop-area) basis with a mailing schedule which covers consecutively, one each week, four geographic regions (Northeast, South, Midwest and West) of the U.S. with one of four regional dealer issues. To those not eligible for this controlled distribution Croplife subscription rate is $5 for one year ($8 a year outside the U.S.). Single copy price, 25¢.

LAWRENCE A. LONG
Editor

DONALD NETH
Managing Editor

EDITORIAL STAFF — John Cipperly, Washington Correspondent; George E. Swarbreck, Canadian and Overseas Editor; Emmet J. Hoffman, Marketing Editor; Walter C. Smith, Research Director.

ADVERTISING STAFF—Wilfred E. Lingren, Advertising Director; Carl R. Vetter, Advertising Department Manager; Bruce A. Kirkpatrick, Advertising Production Manager.

BUSINESS STAFF—Martin E. Newell, Chairman of the Board of Directors; Milton B. Kihlstrum, President and Treasurer; Wilfred E. Lingren, Executive Vice President; Don E. Rogers, Vice President; Paul L. Dittemore, Vice President; Donald Neth, Secretary; Edwin J. Hartwick, Circulation Manager; James G. Pattridge, Assistant Treasurer; Richard Ostlund, Office Manager; Walter O. Buchkosky, Production Superintendent.

BRANCH OFFICES

EASTERN STATES—Paul L. Dittemore, Manager; James W. Miller and George W. Potts, Advertising Sales Representatives; Suite 3214, 551 Fifth Ave., New York 17, N.Y. (Tel. Murray Hill 2-2185).

CENTRAL STATES—Don E. Rogers, Manager; Henry S. French, Assistant Manager; 2272 Board of Trade Bldg., 141 W. Jackson Blvd., Chicago 4, Ill. (Tel. Harrison 7-6782).

SOUTHWEST—Martin E. Newell, Manager; Thomas E. Letch, Assistant Manager; 612 Board of Trade Bldg., Kansas City 5, Mo. (Tel. Victor 2-1350).

NORTHWEST—Paul A. Anderson, Advertising Sales Representative, P.O. Box 67, Minneapolis 1, Minn. (Tel. Franklin 4-5200).

WASHINGTON CORRESPONDENT — John Cipperly, 604 Hibbs Bldg., Washington, D. C. (Tel. Republic 7-8534).

EXECUTIVE AND EDITORIAL OFFICES — 2501 Wayzata Blvd., Minneapolis, Minn. Tel. Franklin 4-5200. Bell System Teletype Service at Minneapolis (MP 179), Kansas City (KC 295), Chicago (CG 340), New York (NY 1-2452), Washington, D.C. (WA 82).

Published by
THE MILLER PUBLISHING CO.
2501 Wayzata Blvd., Minneapolis, Minn.
(Address Mail to P. O. Box 67, Minneapolis 1, Minn.)

Associated Publications—The Northwestern Miller, The American Baker, Farm Store Merchandising, Feedstuffs, Milling Production.

MEETING MEMOS

March 13-15—Weed Control Short Course, University of Idaho, Moscow, Idaho.

March 20—Pest Control Field Day, Dade County Technical Agricultural School, Miami.

Oct. 20—Annual Sales Clinic of Salesmen's Assn. of the American Chemical Industry, Inc., Roosevelt Hotel, New York.

Oct. 20-21—Fertilizer Section, National Safety Council, annual fall meeting, La Salle Hotel, Chicago, Ill.

EDITOR'S NOTE: The listings above are appearing in the Meeting Memos for the first time this week.

March 13-14—Oregon Feed & Seed Dealers Assn., Annual Convention, Multnomah Hotel, Portland, Ore.

March 18-19—South Dakota Weed & Pest Control Conference, City Auditorium, Miller, S.D.

March 18-20—Western Weed Conference, Hotel Davenport, Spokane, Wash.

March 20-21—Pest Control Operators Conference, Michigan State University, East Lansing, Mich.

March 25-28—Minnesota Seed & Fertilizer Dealer Meetings, Sponsored by the University of Minnesota; Gullickson's Cafe, Tracy, March 25; Porter Hotel, St. Peter, March 26; Hotel Albert, Albert Lea, March 27; Legion Hall, Winona, March 28.

March 26-28—North Central Branch Entomological Society of America, Annual Conference, Sheraton-Jefferson Hotel, St. Louis.

April 13-15—Sixth Annual California Fertilizer Conference, California State Polytechnic College, San Luis Obispo, Sidney H. Bierly, 475 Huntington Drive, San Marino 9, Cal., General Manager.

April 17-19—California Hay, Grain & Feed Dealers Assn. Annual Convention, Ambassador Hotel, Los Angeles.

April 22 — Western Agricultural Chemicals Assn., Spring Meeting, Hotel Biltmore, Los Angeles; C. O. Barnard, 2466 Kenwood Ave., San Jose 28, Cal., executive secretary.

April 30 — Manufacturing Chemists' Assn. Precautionary Labeling Conference, Shamrock Hotel, Houston, Texas.

May 22-23—Soil Science Society of North Carolina, First Annual Meeting, Williams Hall, North Carolina State College, Raleigh, N.C.

June 9-11—Association of Southern Feed & Fertilizer Control Officials, Heart of Atlanta Motel, Atlanta, Ga., Bruce Poundstone, University of Kentucky, Lexington, Ky., Secretary-Treasurer.

June 15-18—National Plant Food Institute, Annual Meeting, Greenbrier Hotel, White Sulphur Springs, W. Va.

June 25-27—Pacific Branch, Entomological Society of America, San Diego, Cal.

July 8-10—Pacific Northwest Plant Food Assn., Ninth Annual Regional Fertilizer Conference, Pocatello, Idaho.

July 18-19—Southwest Fertilizer Conference and Grade Hearing, Buccaneer Hotel, Galveston, Texas.

Oct. 22-24—Pacific Northwest Plant Food Assn., Annual Meeting, Gearhart, Ore., Leon S. Jackson, P.O. Box 4623, Sellwood-Moreland Station, Portland, Ore., secretary.

Oct. 28-29—Northwest Garden Supply Trade Show, Masonic Temple, Portland, Ore.

Oct. 29-31—National Agricultural Chemicals Assn., 25th annual meeting, Bon Air Hotel, Augusta, Ga.

Nov. 9-11—California Fertilizer Assn., 35th Annual Convention, Ambassador Hotel, Los Angeles, Sidney H. Bierly, 475 Huntington Drive, San Marino 9, Cal., General Manager.

Dec. 3-5—Agricultural Ammonia Institute, Annual Meeting, Morrison Hotel, Chicago, Jack F. Criswell, Claridge Hotel, Memphis, Executive Vice President.

Jan. 20-22, 1959—California Weed Conference, Santa Barbara, Cal.

J. A. Kelley Named Zonolite President

CHICAGO—The directors of Zonolite Co., Chicago, have elected J. A. Kelley president, it has been announced by A. T. Kearney, chairman of the board. Mr. Kelley succeeds J. B. Myers, who resigned, but who will continue his association with the company as a consultant.

Mr. Kelley joined Zonolite in 1946, and in his early tenure, was responsible for the development of the firm's extensive mining and milling developments in South Carolina, and for the installation and operation of Zonolite plants in many cities in the South and Central South areas. He also managed Zonolite sales activities in these sections. In 1953 he became a vice president, and in 1956 was named executive vice president for the firm, in charge of all plants and mines, including the original vermiculite deposit at Libby, Mont.

A graduate of mining engineering from the University of Pittsburgh, Mr. Kelley formerly served with the U.S. Bureau of Mines and the War Production Board. He joined Zonolite after World War II naval service, where for a period he was part of a WPB mission to China on natural resources development.

CALENDAR FOR 1958-59

MARCH

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

APRIL

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

MAY

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

JUNE

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

JULY

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

AUGUST

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

SEPTEMBER

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

OCTOBER

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

NOVEMBER

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

DECEMBER

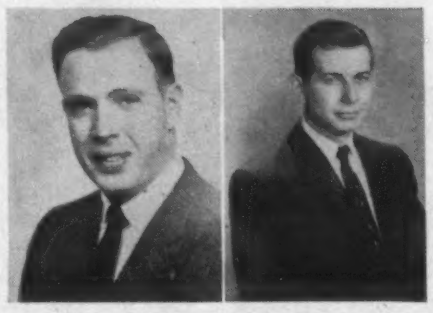
S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

JANUARY

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

FEBRUARY

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28



Edwin M. Miller Francis A. Pastor

CRAG TRANSFERS—Edwin M. Miller, Crag Agricultural Chemicals sales representative, is being transferred from the New York-New England territory to Winchester, Va., it has been announced by Union Carbide Chemicals Co., Division of Union Carbide Corp. Francis A. Pastor will replace Mr. Miller and headquarter at Rochester, N.Y. Mr. Miller will now cover New Jersey, Pennsylvania, Delaware, Maryland, West Virginia, Virginia and North Carolina. Both men will devote most of their time to the sale of Glyodin fruit fungicide and new Sevin experimental insecticide.

Fertilizer Plays Part in Winning Sorghum Yield

PLAINVIEW, TEXAS — Fertilization and irrigation contributed considerably to the winning grain sorghum crop of Texas in 1957. Winner of the award as champion of the state, Hubert A. Setliff, grew 10,195.8 lb. of hybrid grain to the acre.

To get the highest yield in the state's history, Mr. Setliff treated the land with 10 tons of manure per acre, applied 200 lb. of phosphate fertilizer and 125 lb. of ammonia fertilizer all before the crop came up.

He watered the land once before planting and three times afterwards. Since last year was much wetter than normal, rainfall helped reduce the number of irrigations. He used Texas hybrid 620, and in addition to the winning plot, also harvested an average of 8,000 lb. per acre on a 13-acre field.

The land on which the winning crop was grown had been in cash crops for several years. Mr. Setliff had built up the soil gradually, however, by fertilizing it every year.

In the state corn-growing contest, Jerrell Young of Halfway won first place by producing 232.1 bu. per acre. A 4-H Club member, Jerrell seeded Texas Hybrid No. 30 on May 10 and harvested it on Nov. 8. He watered the land twice before planting and irrigated the crop three times after it came up.

He used a field that had been in permanent pasture grasses for three years. Before planting he used 250 lb. of 16-20-0 fertilizer and then later applied 100 lb. of anhydrous ammonia.

Classified Ads

Classified advertisements accepted until Tuesday each week for the issue of the following Monday.

Rates: 15¢ per word; minimum charge $2.25. Situations wanted, 10¢ a word; $1.50 minimum. Count six words of signature, whether for direct reply or keyed care this office. If advertisement is keyed, care of this office, 20¢ per insertion additional charged for forwarding replies. Commercial advertising not accepted in classified advertising department. Display advertising accepted for insertion at minimum rate of $11 per column inch.

All Want Ads cash with order.

FOR FAST ACTION AND RESULTS try Croplife's CLASSIFIED ADVERTISING

REMEMBER TO ORDER CHASE BAGS There's None Better!

INDEX OF ADVERTISERS

The index of advertisers is provided as a service to readers and advertisers. The publisher does not assume any liability for errors or omissions.

Allied Chemical & Dye Corp., Nitrogen Division
American Potash & Chemical Corp.
American Potash Institute
Anco Manufacturing & Supply Co.
Armour Fertilizer Works
Ashcraft-Wilkinson Co.

Baughman Manufacturing Co., Inc.
Bemis Bro. Bag Co.
Blue, John, Co.
Bradley & Baker
Broyhill Company, The 4

Chase Bag Co. 23
Chemagro Corp.
Chemical Insecticide Corp.
Collier Carbon & Chemical Corp.
Commercial Solvents Corp.
Consolidated Mining & Smelting Co.

Dallas Tank Mfg. Co.
Davison Chemical Co.
Deere, John, & Co.
Dempster Mill & Mfg. Co.
Dow Chemical Co.
E. I. du Pont de Nemours & Co., Inc.
Duval Sulphur & Potash Co.

Eastern States Petroleum & Chem. Corp. 17
Emulsol Chemical Corp.
Escambia Chemical Corporation

Food Machinery & Chemical Corp.
Flexo Products, Inc.

Gates Rubber Co. 19
Grace Chemical Co.
Grand River Chemical Co.

Harshaw Chemical Co.
Henderson Mfg. Co.
Hercules Powder Co.
Hough, Frank G., Co.

International Minerals & Chemical Corp.

Johns-Manville Corp.
Jones, Robin, Phosphate Co.

Kalo Inoculant Co.
Kent, Percy, Bag Co.
Kraft Bag Corp. 5

Merck & Co.
Meredith Publishing Co.
Meyer, Wilson & Geo., & Co. 13
Miller Chem. & Fert. Corp. 12
Miller Publishing Co., The 21
Monsanto Chemical Co.

National Distillers & Chemical Corp.
National Potash Co. 7
Naugatuck Chemical Div., U. S. Rubber Co.
Niagara Chemical Division
Nitrogen Div., Allied Chemical & Dye Corporation
Northwest Nitro-Chemicals, Ltd.

Olin Mathieson Chemical Corp.

Pacific Coast Borax Co. 8
Penick, S. B., & Co.
Pennsalt of Washington Div. of Pennsalt Chemicals Corp.
Phillips Chemical Co. 11
Potash Company of America

Raymond Bag Co.

Shell Chemical Corp.
Simonsen Mfg. Co.
Sinclair Chemicals, Inc.
Smith-Douglass Co., Inc.
Smith-Rowland Co., Inc.
Sohio Chemical Co.
Southern Nitrogen Co.
Spencer Chemical Co.
Spraying Systems Co.
Standard Oil Co.
Stepan Chemical Co.
Stewart-Warner Corp.
Suamico Eng. Corp.
Successful Farming

Tennessee Corp.
Tiura Mfg. & Sales 15

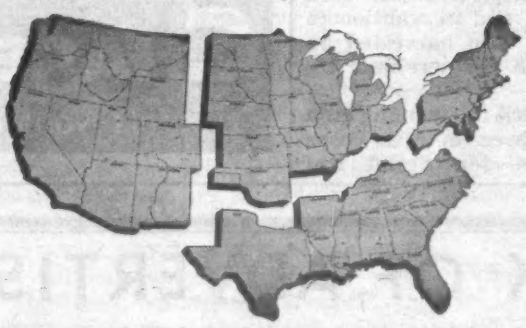
Union Bag-Camp Paper Corp.
U. S. Borax & Chem. Corp. 8
U. S. Industrial Chemicals Co.
U. S. Phosphoric Products Division 3
U. S. Potash Co.
U. S. Rubber Co., Naugatuck Chem. Div.
U. S. Steel Corp.

Velsicol Chemical Corp.

Western Phosphates, Inc. 13

CROPLIFE's sharp, incisive reporting is studied every 7 days by the agricultural chemical industry . . .

CROPLIFE's spot diagnosis of the shifting agricultural chemical scene represents a powerful influence on this 2 billion dollar market . . .



In addition to its national coverage, Croplife offers a selective regional circulation plan in these marketing-areas

NATIONAL COVERAGE WEEKLY . . .

Croplife's carefully controlled circulation provides national coverage weekly of manufacturers, formulators, mixers and ingredient suppliers.

PLUS REGIONAL COVERAGE BY MARKETING-AREAS . . .

In addition, a unique regional circulation plan provides advertisers with a selective marketing-area coverage of wholesale and retail dealers and farm advisory personnel.

WRITE—WIRE—PHONE our nearest office for a complete analysis of Croplife's important role in your advertising program.

Here is a COMPLETE advertising medium with COMPLETE coverage of the market . . .

Croplife . . . for richer sales fields

New York, 551 Fifth Ave.
Murray Hill 2-2185

Minneapolis, 2501 Wayzata Boulevard
Franklin 4-5200

Member of National Business Publications

Member of Business Publications Audit

Chicago, 2272 Board of Trade Bldg.
Harrison 7-6782

Kansas City, 612 Board of Trade Bldg.
Victor 2-1350